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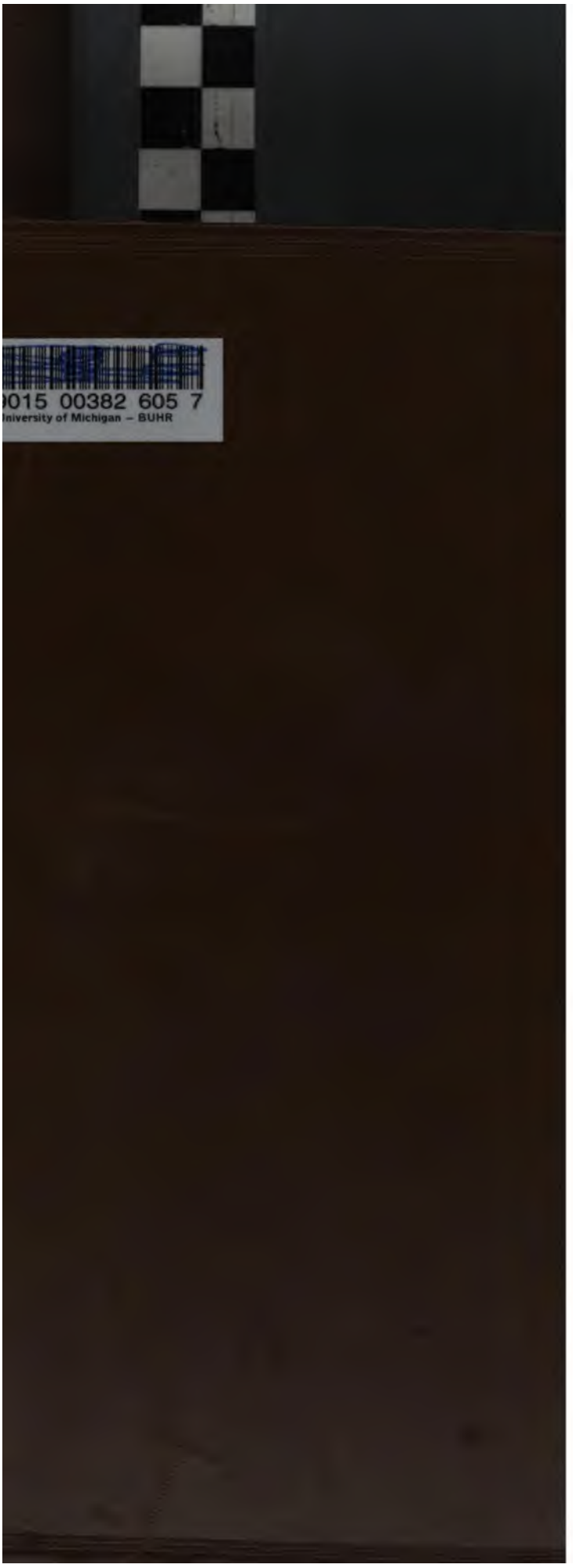
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LONDON:
LONGMAN, BROWN, GREEN, AND LONGMANS,
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1855.

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1805. WILLIAM SAUNDERS, M.D.
1808. MATTHEW BAILLIE, M.D.
1810. SIR HENRY HALFORD, BART., M.D. G.C.H.
1813. SIR GILBERT BLANE, BART., M.D.
1815. HENRY CLINE.
1817. WILLIAM BABINGTON, M.D.
1819. SIR ASTLEY PASTON COOPER, BART., K.C.H. D.C.L.
1821. JOHN COOKE, M.D.
1823. JOHN ABERNETHY.
1825. GEORGE BIRKBECK, M.D.
1827. BENJAMIN TRAVERS.
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1833. JOHN ELLIOTSON, M.D.
1835. HENRY EARLE.
1837. RICHARD BRIGHT, M.D.
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1841. ROBERT WILLIAMS, M.D.
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FELLOWS

OF THE

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P.—President.	V.P.—Vice-President.
T.—Treasurer.	S.—Secretary.
L.—Librarian.	C.—Member of Council.

AUGUST 1855.

Amongst the non-residents, those marked thus (*) are entitled by composition to receive the Transactions.

Elected

1841 *James Abercrombie, M.D., Cape of Good Hope.

1846 *John Abercrombie, M.D., Physician to the General Dispensary, Cheltenham; Cheltenham.

1851 *Henry Wentworth Acland, M.D. F.R.S., Physician to the Radcliffe Infirmary, Oxford.

1842 William Acton, 46, Queen Anne-street, Cavendish-square.

1818 Walter Adam, M.D., Physician to the Royal Public Dispensary, Edinburgh.

1851 John Adams, Surgeon to the London Hospital; 4, St. Helen's-place, Bishopsgate-street.

1852 William Adams, Assistant-Surgeon to the Royal Orthopædic Hospital; Demonstrator of Morbid Anatomy, St. Thomas's Hospital; 5, Henrietta-street, Cavendish-sq.

1818 Thomas Addison, M.D., Physician to, and Lecturer on Medicine at, Guy's Hospital; 24, New-street, Spring-gardens. C. 1826. V.P. 1837. P. 1849-50. C. 1853.

1814 Joseph Ager, M.D., 85, Great Portland-street, Portland-place. C. 1836.

Elected

1837 *Ralph Fawsett Ainsworth, M.D., Manchester.

1819 George Frederick Albert.

1839 Rutherford Alcock, K.C.T. K.T.S., China.

1826 James Alderson, M.D. F.R.S., Physician to St. Mary's Hospital; 20, Berkeley-square. S. 1829. C. 1848. T. 1849. V.P. 1852-3.

1843 Charles James Berridge Aldis, M.D., Physician to the London and Surrey Dispensaries, and Lecturer on Medicine at the Hunterian School of Medicine; 1, Chester-terrace, Chester-square.

1850 Charles Revans Alexander, Assistant-Surgeon to the Royal Infirmary for Diseases of the Eye; 6, Cork-street, Bond-street.

1813 Henry Alexander, F.R.S., Surgeon-Oculist in Ordinary to the Queen, and Surgeon to the Royal Infirmary for Diseases of the Eye; 6, Cork-street, Bond-street. C. 1822, 1840. V.P. 1850.

1836 Henry Ancell, 3, Norfolk-crescent, Oxford-sq. C. 1847-8.

1817 Alexander Anderson.

1820 Thomas Andrews, M.D., Norfolk, Virginia.

1813 William Ankers, Knutsford.

1819 Professor Antommarchi, Florence.

1825 Thomas Graham Arnold, M.D., Stamford.

1819 James Moncrieff Arnott, F.R.S., 2, New Burlington-street. L. 1826-8. V.P. 1832-3. T. 1835-40. C. 1846, 1855. P. 1847-8.

1817 John Ashburner, M.D., 7, Hyde Park-place, Cumberland-gate. C. 1821, 1830-1.

1851 Thomas John Ashton, Surgeon to the Blenheim Dispensary; 31, Cavendish-square.

1825 Benjamin Guy Babington, M.D. F.R.S., Physician to the Deaf and Dumb Institution; 31, George-street, Hanover-square. C. 1829 V.P. 1845-6. T. 1848.

1846 Cornelius Metcalfe Stuart Babington, M.D., Physician to Queen Charlotte's Lying-in Hospital; 29, Hertford-street, May-fair.

1820 *John H. Badley, Dudley.

1838 Francis Badgley, M.D., Toronto, Upper Canada.

1840 William Bainbridge, Kingston, Surrey.

Elected

1836 ANDREW WOOD BAIRD, M.D., Ipswich.

1851 *ALFRED BAKER, Surgeon to the General Hospital, Birmingham.

1839 THOMAS GRAHAM BALFOUR, M.D., Royal Military Asylum; Chelsea. C. 1852-3.

1848 EDWARD BALLARD, M.D., 42, Myddleton-square.

1849 THOMAS BALLARD, 10, Southwick-place, Hyde-park.

1837 WILLIAM BALY, M.D. F.R.S., *Vice-President;* Assistant-Physician to, and Lecturer on Medicine at, St. Bartholomew's Hospital; Physician to the Milbank Prison; 45, Queen Anne-street, Cavendish-square. C. 1845-6. L. 1847. S. 1848-9.

1847 ANDREW WHYTE BARCLAY, M.D., Physician to the Chelsea Dispensary; 23A, Bruton-street, Berkeley-square.

1848 EDGAR BARKER, 9, Oxford-square, Hyde-park.

1833 THOMAS ALFRED BARKER, M.D., Physician to, and Lecturer on Medicine at, St. Thomas's Hospital; 71, Grosvenor-street. C. 1844-5. V.P. 1853-4.

1843 THOMAS HERBERT BARKER, Priory-terrace, Bedford.

1847 GEORGE HILARO BARLOW, M.D., Physician to Guy's Hospital; 5, Union-street, Southwark.

1840 BENJAMIN BARROW, Ryde, Isle of Wight.

1844 WILLIAM RICHARD BASHAM, M.D., Physician to, and Lecturer on Medicine at, the Westminster Hospital; 17, Chester-street, Grosvenor-place. S. 1852-4.

1841 GEORGE BEAMAN, 32, King-street, Covent-garden.

1836 WILLIAM BEAUMONT, Professor of Surgery in the University of King's College; Toronto, Upper Canada.

1840 CHARLES BEEVOR, 41, Upper Harley-street.

1819 THOMAS BELL, F.R.S., Professor of Zoology in King's College, London; Lecturer on Diseases of the Teeth at Guy's Hospital; and President of the Linnean Society; 17, New Broad-street, City. C. 1832-3. V.P. 1854.

1847 JAMES HENRY BENNET, M.D., 60, Grosvenor-street.

1845 EDWIN UNWIN BERRY, 7, James-street, Covent-garden.

1820 STEPHEN BERTIN, Paris.

1815 ARCHIBALD BILLING, M.D., late Senior Physician to the London Hospital; Examiner in Medicine at the University of London; 6, Grosvenor-gate. C. 1825. V.P. 1828-9.

Elected

1827 William Birch, Barton, Lichfield.

1850 James Bird, M.D., 27, Hyde Park-square.

1855 Peter Hinckes Bird, 1, Norfolk-square, Hyde-park.

1849 Edmund Lloyd Birkett, M.D., 48, Russell-square.

1851 George Birkett, M.D., 9, Duncan-terrace, Islington.

1851 John Birkett, Surgeon to, and Lecturer on Anatomy at, Guy's Hospital; 6, Wellington-street, Southwark.

1846 Hugh Birt, Surgeon to the Morro Velhio Hospital.

1843 Patrick Black, M.D., Assistant-Physician to St. Bartholomew's Hospital, and Warden to the Collegiate Establishment at St. Bartholomew's Hospital.

1844 Thomas Blackall, M.D., Physician to the Seamen's Hospital Ship 'Dreadnought;' 8, Queen-street, May-fair.

1847 George C. Blackman, M.D., New York, U.S.

1839 Richard Blagden, Surgeon-Accoucheur, and Surgeon Extraordinary to the Queen, Surgeon in Ordinary to H.R.H. the Duchess of Kent; 7, Percy-place, Walcot, Bath. C. 1847-8.

1840 Peyton Blakiston, M.D. F.R.S., St. Leonards-on-Sea.

1845 Henry Blenkinsop, Warwick.

1823 Louis Henry Bojanus, M.D., Wilna.

1816 Hugh Bone, M.D., Inspector-Gen. of Hospitals; Edinburgh.

1810 John Kaye Booth, M.D., Brush-house, near Sheffield.

1846 Peter Bossey, Woolwich.

1846 John Ashton Bostock, 34, Clarges-street, Piccadilly.

1849 Edward Barons Bowman, M.D., 4, Oxford-terrace, Middleton-road, Dalston.

1841 William Bowman, F.R.S., Professor of Physiology and General Anatomy at King's College, London; Assistant-Surgeon to King's College Hospital, and to the Royal Ophthalmic Hospital, Moorfields; 5, Clifford-street, Bond-street. C. 1852-3.

1814 Richard Bright, M.D. F.R.S., Physician Extraordinary to the Queen, and Consulting Physician to Guy's Hospital; 11, Savile-row, Burlington-gardens. C. 1821-2, 1830, 1833, 1839-40. V.P. 1827-8, 1831-2. P. 1837-8.

1851 Bernard Edward Brodhurst, Assistant-Surgeon to the Royal Orthopædic Hospital; 14, Brook-street, Grosvenor-square.

Elected

1813 Sir Benjamin Collins Brodie, Bart., D.C.L. F.R.S., Serjeant-Surgeon to the Queen, Surgeon in Ordinary to His Royal Highness Prince Albert, Foreign Correspondent of the Institute of France, and Foreign Associate of the Royal Academy of Medicine of Paris; 14, Savile-row, Burlington-gardens. C. 1814-5, 1818-9, 1821-2, 1835-6, 1841-2, 1849. V.P. 1816-7. P. 1839-40.

1844 Charles Brooke, M.A. (Cantab.) F.R.S., Surgeon to, and Lecturer on Surgery at, the Westminster Hospital; 29, Keppel-street, Russell-square. C. 1855.

1848 William Philpot Brookes, M.D., Surgeon to the Cheltenham General Hospital and Dispensary, and Visiting Medical Officer to the Cheltenham District of Lunatic Asylums; Albion House, Cheltenham.

1842 Charles Blakely Brown, M.B., Physician to Queen Charlotte's Lying-in Hospital, and St. George's and St. James's Dispensary; 38, Hill-street, Berkeley-square.

1847 George Brown, Grenadier Guards' Hospital, Rochester-row, Westminster.

1854 *Henry Brown, Surgeon to H.M. the Queen, H.R.H. Prince Albert, and to the Royal Household; Windsor.

1847 *Robert Brown, Winckley-square, Preston, Lancashire.

1851 Alexander Browne, M.D., Army and Navy Club, St. James's-square.

1827 M. Pierre Brulatour, Surgeon to the Hospital; Bordeaux.

1823 B. Bartlet Buchanan, M.D.

1843 John Charles Bucknill, M.B., Axminster, Devonshire.

1839 George Budd, M.D. F.R.S., Professor of Medicine in King's College, London; Physician to King's College Hospital; 20, Dover-street, Piccadilly. C. 1846-7.

1839 Thomas Henry Burgess, M.D.

1853 Patrick Burke, 13, Upper Montague-street, Montague-sq.

1820 Samuel Burrows.

1854 Philip Burrowes, 22, Royal-crescent, Notting-hill.

1833 George Burrows, M.D. F.R.S., Physician to, and Lecturer on Medicine at, St. Bartholomew's Hospital; 18, Cavendish-square. C. 1839-40. T. 1845-7. V.P. 1849-50.

Elected

1837 GEORGE BUSK, F.R.S., *Vice-President;* Surgeon to the Seamen's Hospital Ship 'Dreadnought;' Gloucester-place, Greenwich. C. 1847-8.

1818 JOHN BUTTER, M.D. F.R.S. F.L.S., Physician to the Plymouth Eye Infirmary; Plymouth.

1851 *WILLIAM CADGE, Assistant-Surgeon to the Norfolk and Norwich Hospital; All Saints, Norwich.

1851 THOMAS CALLAWAY, Assistant-Surgeon and Demonstrator of Anatomy at Guy's Hospital; 7, Wellington-street, Southwark.

1852 *GEORGE CANNEY, Bishop's Auckland, Durham.

1847 JOHN BURFORD CARLILL, M.D., 57, Berners-street.

1839 SIR ROBERT CARSWELL, M.D., Physician to his Majesty the King of the Belgians; Brussels.

1825 HARRY CARTER, M.D., Physician to the Kent and Canterbury Hospital; Canterbury.

1853 ROBERT BRUDENELL CARTER, 11, Terrace, Putney.

1820 SAMUEL CARTWRIGHT, F.R.S., 32, Old Burlington-street, and Nizell's House, near Tonbridge.

1845 SAMUEL CARTWRIGHT, Jun., 32, Old Burlington-street.

1839 WILLIAM CATHROW, 42, Weymouth-street, Portland-place.

1845 WILLIAM OLIVER CHALK, 3, Nottingham-terrace, New-road.

1818 RICHARD CHAMBERLAINE, Kingston, Jamaica.

1844 THOMAS KING CHAMBERS, M.D., Physician to St. Mary's Hospital; 1, Hill-street, Berkeley-square.

1816 *WILLIAM FREDERICK CHAMBERS, M.D. K.C.H. F.R.S., Hardle House, near Lymington, Hants. C. 1818-9. V.P. 1821, 1839. P. 1845-6. C. 1847.

1849 FREDERICK CHAPMAN, Richmond-green, Surrey.

1837 HENRY THOMAS CHAPMAN, 16, Lower Seymour-street, Portman-square.

1838 GEORGE CHAPLIN CHILD, M.D., Consulting Physician to the Westminster General Dispensary; 12, Queen Anne-street, Cavendish-square. C. 1853-4.

1852 GEORGE BORLASE CHILDS, 11, Finsbury-place South.

1849 WILLIAM FRANCIS CHORLEY, M.D., Physician to the St. Marylebone Dispensary; Inverness-road, Bayswater.

Elected

1842 William Dingle Chowne, M.D., Physician to the Charing Cross Hospital; 8, Connaught-place-west, Hyde-park. C. 1853-4.

1839 Frederick le Gros Clark, *Vice-President;* Surgeon to, and Lecturer on Surgical Anatomy at, St. Thomas's Hospital; Consulting Surgeon to the Western General Dispensary, and to the London Female Penitentiary, Pentonville; 24, Spring-gardens. S. 1847-9.

1827 Sir James Clark, Bart., M.D. F.R.S., Physician to the Queen, Physician in Ordinary to H.R.H. Prince Albert, and Consulting Physician to H.M. the King of the Belgians; 22B, Brook-street, Grosvenor-square. C. 1830-1, 1843. V.P. 1832-3.

1845 John Clark, M.D., Staff Surgeon, 1st class; West Indies.

1848 John Clarke, M.D., Physician to the British Lying-in Hospital; 42, Hertford-street, May-fair.

1850 Josiah Clarkson, Birmingham.

1842 Oscar Moore Passey Clayton, 3, Percy-street, Bedford-square.

1853 Joseph T. Clover, 44, Mortimer-street, Cavendish-square.

1851 Edward Cock, Surgeon to Guy's Hospital; 12, St. Thomas's-street, Southwark,

1850 Daniel Whitaker Cohen, M.D.

1835 *William Colborne, Chippenham, Wiltshire.

1818 Robert Cole, F.L.S., Holybourne, Hampshire.

1855 Frederick Collins, M.D., Wanstead, Essex.

1828 John Conolly, M.D. D.C.L., Hanwell, Middlesex.

1840 *William Robert Cooke, Burford, Oxfordshire.

1820 Benjamin Cooper, Stamford.

1819 George Cooper, Brentford, Middlesex.

1841 George Lewis Cooper, Surgeon to the Bloomsbury Dispensary; 7, Woburn-place, Russell-square.

1843 William White Cooper, Senior Surgeon to the North London Eye Infirmary, to the Honorable Artillery Company, and Ophthalmic Surgeon to St. Mary's Hospital; 19, Berkeley-square.

1854 Charles Thomas Coote, M.D., Radcliffe Travelling Fellow.

1841 Holmes Coote, Assistant-Surgeon to, and Demonstrator of Anatomy at, St. Bartholomew's Hospital; S. 1853-4.

Elected

1835 GEORGE FORD COPLAND, Cheltenham.

1822 JAMES COPLAND, M.D. F.R.S., Consulting Physician to Queen Charlotte's Lying-in Hospital; 5, Old Burlington-street. C. 1831. V.P. 1838-9. P. 1853-4.

1847 JOHN ROSE CORMACK, M.D., 37, Russell-square.

1839 *CHARLES CÆSAR CORSELLIS, M.D., Resident Physician to the Lunatic Asylum, Wakefield, Yorkshire.

1853 WILLIAM GILLETT CORY, M.D., Sutton, Surrey.

1847 RICHARD PAYNE COTTON, M.D., Assistant-Physician to the Hospital for Consumption and Diseases of the Chest; 46, Clarges-street, Piccadilly.

1828 WILLIAM COULSON, Surgeon to the Magdalen Hospital, Consulting Surgeon to the City Lying-in Hospital, and Senior Surgeon to St. Mary's Hospital; 2, Frederick's-place, Old Jewry. C. 1831. L. 1832-7. V.P. 1851-2.

1817 *SIR PHILIP CRAMPTON, Bart., F.R.S., Surgeon-General to the Forces in Ireland; Dublin.

1841 MERVYN ARCHDALL NOTT CRAWFORD, M.D., Wiesbaden; C. 1853-4.

1822 SIR ALEXANDER CRICHTON, M.D. F.R.S., Physician in Ordinary to their Imperial Majesties the Emperor and Dowager Empress of all the Russias; the Grove, Sevenoaks, Kent. C. 1823-4.

1847 GEORGE CRITCHETT, Assistant-Surgeon to the London Hospital, and the Royal London Ophthalmic Hospital; 46, Finsbury-square.

1837 JOHN FARRAR CROOKES, 53, Russell-square.

1849 *WILLIAM EDWARD CROWFOOT, Beccles, Suffolk.

1818 WILLIAM CUMING, M.D., Professor of Botany at the Glasgow Institution, and Surgeon to the Royal Infirmary at Glasgow.

1851 JAMES CAMERON CUMMING, M.D., 1, Cadogan-place, Sloane-street.

1846 HENRY CURLING, Surgeon to the Royal Sea Bathing Infirmary; Ramsgate, Kent.

1837 THOMAS BLIZARD CURLING, F.R.S., *Treasurer;* Surgeon to, and Lecturer on Surgery at, the London Hospital; 39, Grosvenor-street. S. 1845-6. C. 1850. T. 1854.

1847 JOHN EDMUND CURREY, M.D., Lismore, Ireland.

Elected

1836 GEORGE CURSHAM, M.D., *Treasurer;* Physician to the Hospital for Consumption and Diseases of the Chest, and to the Female Orphan Asylum; 5, Savile-row, Burlington-gardens. S. 1842-7. C. 1850-1. V.P. 1855.

1822 CHRISTOPHER JOHN CUSACK, Chateau d'Eu, France.

1852 THOMAS CUTLER, M.D., Physician to the Spa General Dispensary; Spa, Belgium.

1828 ADOLPHE DALMAS, M.D., Paris.

1836 *JAMES STOCK DANIEL, Ramsgate.

1850 JOHN BAMPFYLDE DANIELL, M.D.

1820 GEORGE DARLING, M.D., 6, Russell-square. C. 1841-2.

1818 *SIR FRANCIS SACHEVEREL DARWIN, Knt., M.D., Breadsall Priory, near Derby.

1848 HENRY DAUBENY, 34A, York-street, Gloucester-place.

1846 FREDERICK DAVIES, Surgeon to the Northern Dispensary; 19, Upper Gower-street, Bedford-square.

1818 HENRY DAVIES, M.D., 6, Duchess-street, Portland-place. C. 1827-8. V.P. 1848-9.

1847 JOHN DAVIES, M.D., Physician to the Hertford Infirmary, and Visiting Physician to the County Gaol and Lunatic Asylum, Hertford.

1853 ROBERT COKE NASH DAVIES, Winchelsea, Sussex.

1852 WILLIAM DAVIES, M.D., Senior Physician to the United Hospital, Bath; Gay-street, Bath.

1852 JOHN HALL DAVIS, M.D., 17, Russell-place, Fitzroy-square.

1820 THOMAS DAVIS, 28, Spring-gardens. C. 1837, 1843.

1818 JAMES DAWSON, Liverpool.

1847 GEORGE EDWARD DAY, M.D. F.R.S., Chandos Professor of Medicine, St. Andrew's.

1846 *SAMUEL BEST DENTON, Ivy Lodge, Hornsea, East Riding, Yorkshire.

1844 ROBERT DICKSON, M.D., 16, Hertford-street, May-fair.

1839 JAMES DIXON, *Librarian;* Surgeon to the Royal London Ophthalmic Hospital; 45, Green-street, Park-lane. L. 1849-55.

1845 JOHN DODD.

1853 ROBERT DRUITT, M.D., 39A, Curzon-street, May-fair.

C

Elected

1846 JOHN DRUMMOND, Deputy-Inspector of Fleets and Hospitals; Royal Naval Hospital, Chatham.

1843 THOMAS JONES DRURY, M.D., Physician to the Salop Infirmary; Shrewsbury.

1845 GEORGE DUFF, M.D., Prospect Lodge, Elgin.

1845 EDWARD WILLSON DUFFIN, 14, Langham-place.

1833 ROBERT DUNN, 31, Norfolk-street, Strand. C. 1845-6.

1843 CHRISTOPHER MERCER DURRANT, M.D., Physician to the East Suffolk and Ipswich Hospital; Ipswich, Suffolk.

1839 HENRY SUMNER DYER, M.D., 37, Bryanstone-square. C. 1854-5.

1836 JAMES WILLIAM EARLE, Norwich.

1854 BOOTH EDDISON, Surgeon to the General Hospital, near Nottingham.

1853 *GEORGE EDWARDES, Wolverhampton.

1824 GEORGE EDWARDS.

1823 CHARLES CHANDLER EGERTON, Kendall Lodge, Epping.

1848 GEORGE VINER ELLIS, Professor of Anatomy in University College, London.

1854 *JAMES ELLISON, M.D., Windsor.

1835 WILLIAM ENGLAND, M.D., Wisbeach, Cambridgeshire.

1842 JOHN ERICHSEN, Professor of Surgery in University College, London, and Surgeon to University College Hospital: 48, Welbeck-street, Cavendish-square. C. 1855.

1815 *GRIFFITH FRANCIS DORSETT EVANS, M.D., High-street, Bedford. C. 1838.

1836 GEORGE FABIAN EVANS, M.D., Physician to the General Hospital, Birmingham.

1845 WILLIAM JULIAN EVANS, M.D.

1844 ARTHUR FARRE, M.D. F.R.S., Professor of Midwifery in King's College, London; 12, Hertford-street, May-fair.

1831 ROBERT FERGUSON, M.D., Physician-Accoucheur to the Queen, Physician to the Westminster Lying-in Hospital; 125, Park-street, Grosvenor-square. C. 1839. V.P. 1847.

1841 WILLIAM FERGUSSON, F.R.S., Surgeon to H.R.H. Prince Albert; Professor of Surgery in King's College, London, and Surgeon to King's College Hospital; 16, George-street, Hanover-square. C. 1849-50.

Elected

1852 ALFRED GEORGE FIELD, 7, Manchester-square.

1850 *FREDERICK FIELD, Birmingham.

1849 GEORGE TUPMAN FINCHAM, M.D., Physician to the Westminster Hospital; 28, Chapel-street, Belgrave-square.

1836 JOHN WILLIAM FISHER, Surgeon-in-chief to the Metropolitan Police Force; 5, Grosvenor-gate. C. 1843-4.

1838 GEORGE LIONEL FITZMAURICE, 97, Gloucester-place, Portman-square.

1842 THOMAS BELL ELCOCK FLETCHER, M.D., Physician to the General Hospital, Birmingham.

1848 JOHN GREGORY FORBES, Surgeon to the Western General Dispensary; 14, Devonport-street, Hyde-park.

1852 JOHN COOPER FORSTER, 11, Wellington-street, Southwark.

1817 *ROBERT THOMAS FORSTER, Southwell, Notts.

1820 THOMAS FORSTER, M.D., Hartfield Lodge, East Grinstead.

1816 JOHN W. FRANCIS, M.D., Professor of Materia Medica in the University of New York, U.S.

1841 JOHN CHRISTOPHER AUGUSTUS FRANZ, M.D., Royal German Spa, Brighton.

1843 PATRICK FRASER, M.D., Physician to the London Hospital; 46, Guildford-street, Russell-square.

1836 JOHN GEORGE FRENCH, Surgeon to the St. James's Infirmary; 41, Great Marlborough-street. C. 1852-3.

1849 ROBERT TEMPLE FRERE, M.D., Physician-Accoucheur to, and Lecturer on Midwifery at, the Middlesex Hospital; 9, Queen-street, May-fair.

1846 HENRY WILLIAM FULLER, M.D., Assistant-Physician to, and Lecturer on Medical Jurisprudence at, St. George's Hospital; 13, Manchester-square.

1815 *GEORGE FREDERICK FURNIVAL, Egham, Surrey.

1854 ALFRED BARING GARROD, M.D., Professor of Materia Medica, Therapeutics, and Clinical Medicine in University College, London, and Physician to University College Hospital; 63, Harley-street, Cavendish-square.

1851 GEORGE GASKOIN, 34, Cambridge-terrace, Hyde-park.

1819 JOHN SAMUEL GASKOIN, 32, Clarges-street, Piccadilly. C. 1836.

1819 HENRY GAULTER.

1848 JOHN GAY, 10, Finsbury-place-south.

Elected

1821 *Richard Francis George, Surgeon to the Bath Hospital.

1854 Bernard Gilpin, Belle Vue House, Ulverstone, Lancashire.

1851 Stephen Jennings Goodfellow, M.D., Assistant-Physician to, and Lecturer on Forensic Medicine at, the Middlesex Hospital; 4, Russell-square.

1818 James Alexander Gordon, M.D. F.R.S., Burford-lodge, Box-hill. C. 1828. V.P. 1829.

1851 Peter Yeames Gowlland, 34, Finsbury-square.

1844 John Grantham, Crayford, Kent.

1850 Henry Gray, F.R.S., Surgeon to the St. George's and St. James's Dispensary; 8, Wilton-street, Grosvenor-place.

1846 George Thompson Gream, M.D., 2, Upper Brook-street, Grosvenor-square.

1816 Joseph Henry Green, F.R.S., Consulting Surgeon to St. Thomas's Hospital; Hadley, Middlesex. C. 1820. V.P. 1830.

1843 Robert Greenhalgh, M.D., Surgeon-Accoucheur to the Royal General Dispensary, St. Pancras; 11, Upper Woburn-place, Russell-square.

1814 John Grove, M.D., Salisbury.

1852 John Grove, Wandsworth, Surrey.

1849 William Withey Gull, M.D., Assistant-Physician to Guy's Hospital; 8, Finsbury-square.

1837 James Manby Gully, M.D., Holyrood House, Great Malvern.

1819 Sir John Gunning, Knt., C.B., Inspector of Hospitals; Paris C. 1823.

1842 Charles William Gardiner Guthrie, Surgeon to, and Lecturer on Surgery at, the Westminster Hospital, and Surgeon to the Westminster Ophthalmic Hospital; 18, Pall Mall East.

1854 Samuel Osborne Habershon, M.D., Demonstrator of Morbid Anatomy, and Curator of the Museum, at Guy's Hospital; Physician to the City Dispensary; 48, Finsbury-circus.

1849 Hammett Hailey, Newport Pagnell, Bucks.

1852 Robert James Hale, M.D.

1845 John Hall, M.D., Deputy-Inspector-General of Hospitals; Cape of Good Hope.

Elected

1848 ALEXANDER HALLEY, M.D., F.G.S., 14, Queen Anne-street, Cavendish-square.

1819 THOMAS HAMMERTON, 111, Piccadilly. C. 1829-30.

1838 HENRY HANCOCK, Surgeon to the Charing Cross Hospital; 59, Harley-street, Cavendish-square. C. 1851.

1849 *RICHARD JAMES HANSARD, Broad-street, Oxford.

1848 *GEORGE HARCOURT, M.D., Chertsey, Surrey.

1836 JOHN FOSSE HARDING, 6, Mylne-street, Myddleton-square.

1843 THOMAS SUNDERLAND HARRISON, M.D. F.L.S., Garston Lodge, Somersetshire.

1846 JOHN HARRISON, 2, the Court-yard, Albany.

1841 WILLIAM HARVEY, Surgeon to the Royal Dispensary for Diseases of the Ear, and to the Freemasons' Female Charity; 2, Soho-square. C. 1854.

1853 ARTHUR HILL HASSALL, M.D., Physician to the Royal Free Hospital; 8, Bennett-street, St. James's.

1855 ALFRED HAVILAND, Bridgewater, Somerset.

1828 CÆSAR HENRY HAWKINS, *President;* Senior Surgeon to St. George's Hospital; 26, Lower Grosvenor-street. C. 1830-1. V.P. 1838-9. T. 1841-4.

1838 CHARLES HAWKINS, 22, Savile-row, Burlington-gardens. C. 1846-7. S. 1850.

1848 THOMAS HAWKSLEY, M.D., Physician to the Dispensary for Consumption, Margaret-street; 26, George-street, Hanover-square.

1820 THOMAS EMERSON HEADLAM, M.D., Newcastle-upon-Tyne.

1848 *JAMES NEWTON HEALE, M.D., Physician to the Winchester County Hospital; Winchester.

1850 GEORGE HEATON, M.D., Boston, U.S.

1829 THOMAS HEBERDEN, M.D., 72, Park-street, Grosvenor-square.

1844 JOHN HENNEN, M.D., Physician to the Western General Dispensary; 24, Upper Southwick-street, Hyde-park. L. 1848-50.

1848 MITCHELL HENRY, Assistant-Surgeon to the Middlesex Hospital; 5, Harley-street, Cavendish-square.

1849 AMOS HENRIQUES, M.D., 67, Upper Berkeley-street, Portman-square.

1821 VINCENT HERBERSKI, M.D., Professor of Medicine in the University of Wilna.

Elected

1843 PRESCOTT GARDNER HEWETT, Assistant-Surgeon to, and Lecturer on Anatomy at, St. George's Hospital; 35, Hertford-street, May-fair.

1853 THOMAS HEWLETT, Surgeon to Harrow School; Harrow.

1841 *NATHANIEL HIGHMORE, Consulting-Surgeon to the Weymouth and Dorsetshire Eye Infirmary; Sherborne, Dorsetshire.

1814 *WILLIAM HILL, Wootton-under-Edge, Gloucestershire.

1854 THOMAS HILLIER, B.A. (Lond.), Resident Medical Officer in University College Hospital.

1842 WILLIAM AUGUSTUS HILLMAN, Assistant-Surgeon to, and Lecturer on Anatomy and Physiology at, the Westminster Hospital; 1, Argyll-street, Regent-street.

1841 JOHN HILTON, F.R.S., Surgeon to, and Lecturer on Anatomy at, Guy's Hospital; 10, New Broad-street, City. C. 1851.

1848 MARTIN THOMAS HISCOX, M.D., Bath, Somersetshire.

1840 THOMAS HODGKIN, M.D., 35, Bedford-square. C. 1842-3.

1813 JOSEPH HODGSON, F.R.S., 60, Westbourne-terrace, Hyde Park-gardens. C. 1817. P. 1851-2.

1835 THOMAS HENRY HOLBERTON, Hampton, Middlesex.

1843 LUTHER HOLDEN, 54, Gower-street, Bedford-square.

1814 SIR HENRY HOLLAND, Bart., M.D. F.R.S., Physician to the Queen, and Physician in Ordinary to H.R.H. Prince Albert; 25, Brook-street, Grosvenor-square. C. 1817, 1833-4. V.P. 1826, 1840.

1846 BARNARD WIGHT HOLT, Surgeon to the Westminster Hospital; 5, Parliament-street.

1846 CARSTEN H. HOLTHOUSE, Surgeon to the Public Dispensary, Lincoln's Inn; Assistant-Surgeon to, and Lecturer on Anatomy and Physiology at, the Westminster Hospital.

1853 WILLIAM CHARLES HOOD, M.D., Medical Superintendent, Bethlem Hospital.

1819 *JOHN HOWELL, M.D. F.R.S.E., Deputy-Inspector-General of Military Hospitals; Honorary and Consulting Physician to the Bristol Royal Infirmary; Datchet, near Windsor.

1828 *EDWARD HOWELL, M.D., Swansea, Glamorganshire.

1844 EDWIN HUMBY, 1, Windsor-terrace, Maida-hill.

Elected

1822 ROBERT HUME, M.D. C.B., Inspector of Hospitals; Commissioner in Lunacy; 9, Curzon-street, May-fair. V.P. 1836.

1840 HENRY HUNT, M.D., 68, Brook-street, Hanover-square.

1842 CHRISTOPHER HUNTER, Downham, Norfolk.

1849 EDWARD LAW HUSSEY, Surgeon to the Radcliffe Infirmary, Oxford.

1820 WILLIAM HUTCHINSON, M.D.

1840 CHARLES HUTTON, M.D., Physician to the Royal Infirmary for Children; Assistant-Physician to the General Lying-in Hospital; 26, Lowndes-street, Belgrave-square.

1848 GEORGE COCKBURN HYDE, 16, South Parade, Brompton.

1847 WILLIAM EDMUND IMAGE, Surgeon to the Suffolk General Hospital; Bury St. Edmund's, Suffolk.

1826 WILLIAM INGRAM, Midhurst, Sussex.

1845 *HENRY JACKSON, Surgeon to the Sheffield General Infirmary; St. James's-row, Sheffield.

1841 PAUL JACKSON, 15, Bentinck-street, Manchester-square.

1847 THOMAS REYNOLDS JACKSON, 28, Charles-street, St. James's.

1841 MAXIMILIAN MORITY JACOBOVICZ, M.D., Pesth.

1825 JOHN B. JAMES, M.D.

1847 *WILLIAM WITHALL JAMES, Exeter, Devonshire.

1844 SAMUEL JOHN JEAFFRESON, M.D., Leamington, Warwickshire.

1839 JULIUS JEFFREYS, F.R.S., Kingston, Surrey.

1840 *GEORGE SAMUEL JENKS, M.D., Physician to the Sussex County Hospital; Brighton.

1851 WILLIAM JENNER, M.D., Professor of Pathological Anatomy in University College, London, and Physician to University College Hospital; 8, Harley-street, Cavendish-square.

1848 ATHOL ARCHIBALD WOOD JOHNSON, Lecturer on Physiology at St. George's Hospital Medical School, and Surgeon to the Hospital for Sick Children; 37, Albemarle-street.

1851 EDMUND CHARLES JOHNSON, M.D., 6, Savile-row, and 20, Arlington-street.

1821 SIR EDWARD JOHNSON, M.D., Weymouth, Dorsetshire.

1847 GEORGE JOHNSON, M.D., Assistant-Physician to King's College Hospital; 3, Woburn-square.

Elected

1837 HENRY CHARLES JOHNSON, Surgeon to, and Lecturer on Medical Jurisprudence at, St. George's Hospital; 6, Savile-row, Burlington-gardens. C. 1850-1.

1844 JOHN JOHNSTON, 14, Old Burlington-street.

1853 HENRY JONES, 23, Soho-square.

1844 HENRY BENCE JONES, M.D. F.R.S., Physician to St. George's Hospital; 31, Brook-street, Grosvenor-square. C. 1855.

1835 HENRY DERVICHE JONES, 23, Soho-square. C. 1854-5.

1853 THOMAS WHARTON JONES, F.R.S., 35, George-street Hanover-square.

1837 THOMAS WILLIAM JONES, M.D., Physician to the City Dispensary; 19, Finsbury-pavement.

1829 *GEORGE CHARLES JULIUS, Richmond, Surrey.

1816 *GEORGE HERMANN KAUFFMANN, M.D., Hanover.

1815 ROBERT KEATE, Serjeant-Surgeon to the Queen, and Surgeon to H.R.H. the Duchess of Gloucester; 11, Hertford-street, May-fair. C. 1818-9. V.P. 1826, 1844.

1848 *DANIEL BURTON KENDELL, M.D., St. John's, Wakefield, Yorkshire.

1847 ALFRED KEYSER, 21, Norfolk-crescent, Oxford-square.

1839 *DAVID KING, M.D., Eltham, Kent.

1851 JOHN ABERNETHY KINGDON, 2, New Bank-buildings, City.

1840 SAMUEL ARMSTRONG LANE, Lecturer on Anatomy; Surgeon to the Lock Hospital, and to St. Mary's Hospital; 1, Grosvenor-place. C. 1849-50.

1841 *CHARLES LASHMAR, M.D., Croydon, Surrey.

1816 G. E. LAWRENCE.

1809 WILLIAM LAWRENCE, F.R.S., President of the Royal College of Surgeons of England; Surgeon Extraordinary to the Queen; Surgeon to, and Lecturer on Surgery at, St. Bartholomew's Hospital, and Surgeon to Bridewell and Bethlem Hospital; 18, Whitehall-place. S. 1813-7. V.P. 1818-19. C. 1820. T. 1821-6. P. 1831-2. C. 1833-4, 1842-3.

1840 THOMAS LAYCOCK, M.D., Professor of the Practice of Medicine in the University of Edinburgh.

1843 *JESSE LEACH, Heywood, near Bury, Lancashire.

1823 JOHN G. LEATH, M.D.

1822 JOHN JOSEPH LEDSAM, M.D.

Elected

1822 Robert Lee, M.D. F.R.S., Physician to the British Lying-in Hospital; Physician-Accoucheur to the St. Marylebone Infirmary; and Lecturer on Midwifery at St. George's Hospital; 4, Savile-row, Burlington-gardens. C. 1829, 1834. S. 1830-3. V.P. 1835.

1823 Henry Lee, M.D., 20, Keppel-street, Russell-square. C. 1837. S. 1839-40.

1843 Henry Lee, Assistant-Surgeon to King's College Hospital, and Surgeon to the Lock Hospital; 13, Dover-street, Piccadilly.

1851 George Macartney Leese, 50, Gloucester-place, Portman-square.

1836 Frederick Leighton, M.D., Frankfort-on-the-Maine.

1854 Hananel de Leon, M.D., 2, Hampden-villas, Sandgate-road, Folkestone.

1847 John Charles Weaver Lever, M.D., Physician-Accoucheur to Guy's Hospital; 12, Wellington-street, Southwark.

1847 Sir John Liddell, M.D. F.R.S. C.B., Director-General of the Medical Department of the Navy; Somerset House.

1806 John Lind, M.D.

1845 William John Little, M.D., Physician to, and Lecturer on Medicine at, the London Hospital; 34, Brook-street, Grosvenor-square.

1819 Robert Lloyd, M.D.

1824 Eusebius Arthur Lloyd, Surgeon to St. Bartholomew's and Christ's Hospitals; 14, Bedford-row. S. 1827-8. V.P. 1838. C. 1843-4.

1820 J. G. Locher, M.C.D., Town Physician of Zurich.

1824 Charles Locock, M.D., First Physician-Accoucheur to the Queen, and Consulting Physician to the General Lying-in-Hospital; 26, Hertford-street, May-fair. C. 1826. V.P. 1841.

1852 Charles Lodge, M.D.

1846 Henry Thomas Lomax, Stafford.

1844 Edward Francis Lonsdale, Surgeon to the Royal Orthopædic Hospital; 26, Montague-street, Russell-square.

1836 Joseph S. Löwenfeld, M.D., Berbice.

Elected

1815 *Peter Luard, M.D.

1852 James Luke, F.R.S., Senior-Surgeon to the London Hospital; 37, Broad-street-buildings, City.

1846 William M'Ewen, M.D., Surgeon to the Cheshire County Gaol, and House-Surgeon to the Chester General Infirmary; Newgate-street, Chester.

1814 Sir James Macgrigor, Bart., M.D. K.C.B. K.T.S. LL.D. F.R.S., Director-General of the Medical Department of the Army; 3, Harley-street, Cavendish-square. C. 1820. V.P. 1815-16. C. 1834-5.

1823 George Macilwain, Consulting Surgeon to the Finsbury Dispensary; 3, the Court-yard, Albany. C. 1829-30. V.P. 1848.

1848 Frederick William Mackenzie, M.D., Physician to the Western General Dispensary; 11, Chester-place, Hyde-park-square.

1818 William Mackenzie, Surgeon to the Eye Infirmary, Glasgow.

1854 *Draper Mackinder, M.D., Gainsborough, Lincolnshire.

1822 Richard Macintosh, M.D.

1844 Daniel Maclachlan, M.D., Physician to the Royal Hospital, Chelsea, and Deputy-Inspector-General of Hospitals; Royal Hospital, Chelsea.

1851 Samuel Maclean, 11, Brook-street, Grosvenor-square.

1849 Duncan Maclachlan Maclure, 14, Harley-street, Cavendish-square.

1842 John Macnaught, M.D., Bedford-street, Liverpool.

1835 Daniel Chambers Macreight, M.D., St. Hillier's, Jersey.

1837 Andrew Melville M'Whinnie, Assistant-Surgeon to, and Lecturer on Comparative Anatomy at, St. Bartholomew's Hospital; Assistant-Surgeon to the London Hospital for Diseases of the Skin; 5, Crescent, New Bridge-street, Blackfriars. C. 1851-2.

1848 William Orlando Markham, M.D., Assistant-Physician to St. Mary's Hospital; 33, Clarges-street, Piccadilly.

1824 Sir Henry Marsh, Bart., M.D., Dublin.

1838 Thomas Parr Marsh, M.D., Physician to the Salop Infirmary, Shrewsbury.

Elected

1851 JOHN MARSHALL, Assistant-Surgeon to University College Hospital; 10, Savile-row, Burlington-gardens.

1841 JAMES RANALD MARTIN, F.R.S., 71A, Grosvenor-street. C. 1853.

1849 GEORGE BELLASIS MASFEN, 78, Oxford-street, Manchester.

1853 WILLIAM EDWARD MASFEN, Stafford.

1818 J. P. MAUNOIR, Professor of Surgery at Geneva.

1837 THOMAS MAYO, M.D. F.R.S., Physician to the St. Marylebone Infirmary; 56, Wimpole-street, Cavendish-square. S. 1841. C. 1847-8. V.P. 1851-2.

1839 RICHARD HENRY MEADE, Bradford, Yorkshire.

1819 *THOMAS MEDHURST, Hurstbourne Tarrant, Hampshire.

1837 SAMUEL WILLIAM JOHN MERRIMAN, M.D., Physician to the Royal Infirmary for Children; Consulting Physician to the Westminster General Dispensary; and Assistant-Physician to the West London Lying-in Institution; 3, Charles-street, Westbourne-terrace. C. 1851-2.

1852 JAMES MERRYWEATHER, 57, Brook-street, Grosvenor-square.

1847 EDWARD MERYON, M.D., 14, Clarges-street, Piccadilly.

1815 AUGUSTUS MEYER, M.D., St. Petersburgh.

1840 RICHARD MIDDLEMORE, Consulting-Surgeon to the Eye Infirmary, Birmingham.

1854 EDWARD ARCHIBALD MIDDLESHIP, Richmond, Surrey.

1818 *PATRICK MILLER, M.D. F.R.S. E., Physician to the Devon and Exeter Hospitals, and to the Lunatic Asylum; Exeter, Devonshire.

1848 GAVIN MILROY, M.D., 55, Victoria-street, Westminster.

1852 JAMES MONRO, M.D., Surgeon-Major, Coldstream Guards; Vincent-square, Westminster.

1844 NATHANIEL MONTEFIORE, 4, Stanhope-street, May-fair.

1836 GEORGE MOORE, M.D., Hastings.

1848 CHARLES HEWITT MOORE, Surgeon to, and Lecturer on Anatomy at, the Middlesex Hospital; 35, Montague-place, Russell-square.

1854 GEORGE MOSELEY, Sandgate, Kent.

1851 FREDERICK JOHN MOUAT, M.D., Professor of Medicine in the Medical College of Calcutta, and Secretary of the Council of Education in India; Calcutta.

1814 *GEORGE FREDERICK MUHRY, M.D., Hanover.

Elected

1847 SIMON MURCHISON, Steepleaston, near Woodstock, Oxon.

1845 THOMAS D. MUTTER, M.D., Professor of Surgery in Jefferson Medical College; Philadelphia.

1840 ROBERT NAIRNE, M.D., Physician to, and Lecturer on Medicine at, St. George's Hospital; 44, Charles-street, Berkeley-square. C. 1848-9. T. 1852-3.

1835 THOMAS ANDREW NELSON, M.D., 10, Nottingham-terrace, New-road.

1843 EDWARD NEWTON, 30, Fitzroy-square.

1851 JAMES NICHOLS, 13, Savile-row, Burlington-gardens.

1819 *GEORGE NORMAN, Surgeon to the United Hospital and Puerperal Charity; Bath.

1849 HENRY BURFORD NORMAN, Surgeon to the North London Eye Infirmary, and the St. Marylebone Dispensary; 3, Duchess-street, Portland-place.

1845 HENRY NORRIS, South Petherton, Somerset.

1849 *ARTHUR NOVERRE, Great Stanmore, Middlesex.

1847 *WILLIAM EDWARD CHARLES NOURSE, Ivy House, West Cowes, Isle of Wight.

1843 WILLIAM O'CONNOR, M.D., Physician to the Royal Free Hospital; 30, Upper Montague-street, Montague-square.

1847 THOMAS O'CONNOR, March, Cambridgeshire.

1846 FRANCIS ODLING, 52, Devonshire-street, Portland-place.

1822 JAMES ADEY OGLE, M.D. F.R.S., Clinical and Aldrichian Professor of Medicine, Oxford; and Senior Physician to the Radcliffe Infirmary; Oxford.

1855 WILLIAM OGLE, M.D., Physician to the Royal Pimlico Dispensary; 9, Lower Belgrave-street, Belgrave-square.

1850 HENRY OLDHAM, M.D., Obstetric Physician to Guy's Hospital; 26, Finsbury-square.

1842 WILLIAM PIERS ORMEROD.

1846 *EDWARD LATHAM ORMEROD, M.D., Physician to the Sussex County Hospital; Old Steyne, Brighton.

1847 WILLIAM EMANUEL PAGE, M.D., Physician to, and Lecturer on Medicine at, St. George's Hospital; 38A, Curzon-street, May-fair.

1847 *WILLIAM BOUSFIELD PAGE, Surgeon to the Cumberland Infirmary; Carlisle.

Elected

1840 JAMES PAGET, F.R.S., Assistant-Surgeon to, and Lecturer on General and Morbid Anatomy and Physiology at, St. Bartholomew's Hospital; 24, Henrietta-street, Cavendish-square. C. 1848-9.

1806 *ROBERT PALEY, M.D., Bishopston Grange, near Ripon, Yorkshire.

1836 S. W. LANGSTON PARKER, Surgeon to the Queen's Hospital; Birmingham.

1847 NICHOLAS PARKER, M.B., Assistant-Physician to, and Microscopical Demonstrator of Morbid Anatomy at, the London Hospital; 22, Finsbury-square.

1841 JOHN PARKIN, M.D., Paris.

1851 JAMES PART, 7, Camden-road-villas, Camden-town.

1828 RICHARD PARTRIDGE, F.R.S., Surgeon to King's College Hospital, and Professor of Anatomy in King's College, London; 17, New-street, Spring-gardens. S. 1832-6. C. 1837-8. V.P. 1847-8.

1845 THOMAS BEVILL PEACOCK, M.D., *Secretary;* Assistant-Physician to St. Thomas's Hospital; 20, Finsbury-circus.

1830 CHARLES P. PELECHIN, M.D., St. Petersburgh.

1819 JOHN PRYOR PEREGRINE, M.D., Jersey. C. 1839-40.

1839 THOMAS PEREGRINE, M.D., 3, Half Moon-street, Piccadilly.

1844 WILLIAM VESALIUS PETTIGREW, M.D., 7, Chester-street, Grosvenor-place.

1837 BENJAMIN PHILLIPS, F.R.S., Brentbridge House, Hendon, Middlesex. L. 1841-5. T. 1847-50. V.P. 1853.

1814 *EDWARD PHILLIPS, M.D., Consulting Physician to the County Hospital; Winchester, Hampshire.

1848 EDWARD PHILLIPS, M.D., Coventry, Warwickshire.

1852 RICHARD PHILLIPS, 5, Winchester-place, Pentonville.

1854 THOMAS BACON PHILLIPS, 6, Oriental-place, Brighton.

1846 FRANCIS RICHARD PHILP, M.D.

1851 *JAMES HOLLINS PICKFORD, M.D. M.R.I.A., Brighton.

1851 JOHN PICTON, M.D.

1836 ISAAC PIDDUCK, M.D., Physician to the Bloomsbury Dispensary; 22, Montague-street, Russell-square.

1852 GEORGE PILCHER, 2, Harley-street, Cavendish-square.

1852 HENRY PILLEAU, Staff Surgeon; 11, Young-street, Kensington-square.

Elected

1841 Henry Alfred Pitman, M.D., Assistant-Physician to, and Lecturer on Materia Medica at, St. George's Hospital; 28, Montague-place, Russell-square. L. 1851-3.

1850 Alfred Poland, Assistant-Surgeon to Guy's Hospital, and to the Royal Ophthalmic Hospital; 5, St. Helen's-place, Bishopsgate-street.

1845 George David Pollock, Surgeon to the North London Eye Infirmary; Assistant-Surgeon to, and Lecturer on Anatomy at, St. George's Hospital; 27, Grosvenor-street.

1843 Charles Pope, M.D. F.L.S., Temple Cloud, near Bristol.

1846 Jephson Potter, M.D. F.L.S., Oxford-road, Manchester.

1842 James Powell, M.B. (Lond.), 77, Guildford-street, Russell-square.

1840 Lewis Powell, 13, John-street, Berkeley-square.

1851 Robert Francis Power, M.D., 14, Waterloo-place.

1839 John Propert, 6, New Cavendish-street, Portland-place.

1845 John Pyle, Surgeon to the North London Eye Infirmary; 56, Oxford-terrace, Hyde-park.

1816 Sir William Pym, M.D., Inspector of Hospitals.

1830 Jones Quain, M.D., Paris.

1850 Richard Quain, M.D., Assistant-Physician to the Hospital for Consumption; 23, Harley-street, Cavendish-square.

1835 Richard Quain, F.R.S., Surgeon to University College Hospital; Consulting Surgeon to the Eye Infirmary; and Professor of Clinical Surgery in University College, London; 32, Cavendish-square. C. 1838-9. L. 1846-8. T. 1851-3.

1852 Charles Bland Radcliffe, M.D., Assistant-Physician to, and Lecturer on Materia Medica at, the Westminster Hospital; 4, Henrietta-street, Cavendish-square.

1854 William Henry Ransom, M.D., Nottingham.

1821 Henry Reeder, M.D., Ridge House, Chipping, Sudbury.

1835 G. Regnoli, Professor of Surgery in the University of Pisa.

1847 Samuel Richards, M.D., 36, Bedford-square.

1852 Christopher Thomas Richardson, M.B., 16, Hinde-street, Manchester-square.

1829 Sir John Richardson, Knt., F.R.S. C.B.

Elected

1849 *WILLIAM RICHARDSON, M.D., 9, Ephraim-road, Tunbridge Wells, Kent.

1845 BENJAMIN RIDGE, M.D., Putney, Surrey.

1843 JOSEPH RIDGE, M.D., 39, Dorset-square.

1852 CHARLES RIDLEY, 6, Charlotte-street, Bedford-square.

1852 JOHN ROBERTS, M.D., Physician to the Westminster General Dispensary; 75, Grosvenor-street.

1829 *ARCHIBALD ROBERTSON, M.D. F.R.S., Northampton.

1855 CHARLES ALEXANDER LOCKHART ROBERTSON, M.D., 1, Charles-street, Berkeley-square.

1843 GEORGE ROBINSON, M.D., Newcastle-on-Tyne.

1843 WILLIAM RODEN, M.D. F.L.S., Kidderminster.

1835 GEORGE HAMILTON ROE, M.D., Senior Physician to the Westminster Hospital and to the Hospital for Consumption and Diseases of the Chest; 26, Upper Brook-street, Grosvenor-square. C. 1841-2.

1836 ARNOLD ROGERS, 16, Hanover-square.

1846 WILLIAM RICHARD ROGERS, M.D., 56, Berners-street.

1819 HENRY SHUCKBURGH ROOTS, M.D., Consulting Physician to St. Thomas's Hospital; 2, Russell-square. C. 1833. V.P. 1834-5. C. 1845.

1829 *WILLIAM SUDLOW ROOTS, Kingston, Surrey.

1850 GEORGE ROPER, 180, Shoreditch.

1836 RICHARD ROSCOE, M.D., Twickenham, Middlesex.

1836 *CALEB BURRELL ROSE, Swaffham, Norfolk.

1850 ARCHIBALD COLQUHOUN ROSS, M.D., Madeira.

1849 CHARLES HENRY FELIX ROUTH, M.D., 52, Montague-square.

1845 HENRY MORTIMER ROWDON, 29, Nottingham-place, York-gate, Regent's-park.

1834 HENRY WILLIAM RUMSEY, Cheltenham.

1845 JAMES RUSSELL, M.D., Physician to the General Dispensary, Birmingham.

1851 HENRY HYDE SALTER, M.D., Assistant-Physician to, and Lecturer on Physiology and Pathology at, the Charing Cross Hospital; 6, Montague-street, Russell-square.

1827 *THOMAS SALTER, F.L.S., Poole, Dorsetshire.

1844 *THOMAS BELL SALTER, M.D. F.L.S., Ryde, Isle of Wight.

1849 HUGH JAMES SANDERSON, M.D., 26, Upper Berkeley-street, Portman-square.

Elected

1847 WILLIAM HENRY OCTAVIUS SANKEY, M.D., Middlesex County Lunatic Asylum, Hanwell.

1845 EDWIN SAUNDERS, Surgeon-Dentist to the Queen, and Lecturer on Diseases of the Teeth at St. Thomas's Hospital; 13A, George-street, Hanover-square.

1834 LUDWIG V. SAUVAN, M.D., Warsaw.

1840 AUGUSTIN SAYER, M.D., 28, Upper Seymour-street, Portman-square.

1853 MAURICE SCHULHOF, M.D., Physician to the Royal General Dispensary, Bartholomew-close; 7, Suffolk-place, Pall Mall.

1824 EDWARD JAMES SEYMOUR, M.D. F.R.S., 13, Charles-street, Berkeley-square. C. 1826, 1831. S. 1827-8. V.P. 1830, 1842.

1840 WILLIAM SHARP, F.R.S., Rugby.

1837 WILLIAM SHARPEY, M.D. F.R.S. Professor of Anatomy and Physiology in University College, London, and Secretary of the Royal Society; 35, Gloucester-crescent, Regent's-park. C. 1848-9.

1836 ALEXANDER SHAW, Surgeon to, and Lecturer on Surgery at, the Middlesex Hospital; 25, Henrietta-street, Cavendish-square. C. 1842. S. 1843-4. V.P. 1851-2.

1848 *EDWARD JAMES SHEARMAN, M.D., Rotherham, Yorkshire.

1849 FRANCIS SIBSON, M.D. F.R.S., Physician to St. Mary's Hospital; 40, Brook-street, Grosvenor-square.

1848 EDWARD HENRY SIEVEKING, M.D., Assistant-Physician to St. Mary's Hospital; 3, Bentinck-street, Manchester-sq.

1839 THOMAS HOOKHAM SILVESTER, M.D., High-street, Clapham. C. 1854-5.

1842 JOHN SIMON, F.R.S., Surgeon to, and Lecturer on Pathology at, St. Thomas's Hospital; Medical Officer of the General Board of Health; 37A, Upper Grosvenor-street. C. 1854-5.

1821 CHARLES SKENE, M.D., Professor of Anatomy and Surgery; Marischal College, Aberdeen.

1827 GEORGE ROBERT SKENE, Bedford.

1824 FREDERIC CARPENTER SKEY, F.R.S., Surgeon to, and Lecturer on Anatomy at, St. Bartholomew's Hospital; Surgeon to the Northern Dispensary; 13, Grosvenor-street. C. 1828. L. 1829-31. V.P. 1841-2.

Elected

1852 CHARLES CASE SMITH, Senior-Surgeon to the Suffolk General Hospital; Bury St. Edmunds, Suffolk.

1854 EDWARD SMITH, M.D. LL.B., Assistant-Physician to the Hospital for Consumption and Diseases of the Chest; 16, Norfolk-terrace, Westbourne-grove.

1835 JOHN GREGORY SMITH, Harewood, Yorkshire.

1843 ROBERT WILLIAM SMITH, M.D. M.R.I.A., Professor of Surgery in the University of Dublin; Surgeon to the Richmond Hospital; Dublin.

1838 SPENCER SMITH, *Secretary;* Senior Assistant-Surgeon to, and Lecturer on Surgery at, St. Mary's Hospital; 48, Sussex-gardens, Hyde-park. C. 1854.

1845 WILLIAM SMITH, Park-street, Bristol.

1847 WILLIAM SMITH, M.D., Weymouth, Dorsetshire.

1850 WILLIAM TYLER SMITH, M.D., Physician-Accoucheur to St. Mary's Hospital; 7, Upper Grosvenor-street.

1843 JOHN SNOW, M.D., 18, Sackville-street, Piccadilly.

1851 JOHN SODEN, Surgeon to the Bath Hospital; Bath.

1816 *JOHN SMITH SODEN, New Sidney-place, Bath.

1830 SAMUEL SOLLY, F.R.S., Surgeon to St. Thomas's Hospital; 18, St. Helen's Place, Bishopsgate-street. L. 1838-40. C. 1845-6. V.P. 1849-50.

1844 FREDERICK ROBERT SPACKMAN, M.B., Harpenden, St. Alban's.

1834 JAMES SPARK, Newcastle, Staffordshire.

1851 ROBERT JOHN SPITTA, M.B., Clapham, Surrey.

1843 *STEPHEN SPRANGER, Grantham, Lincolnshire.

1838 GEORGE JAMES SQUIBB, 11, Montague-place, Montague-square.

1815 EDWARD STANLEY, F.R.S., Surgeon to St. Bartholomew's Hospital; 23A, Brook-street, Grosvenor-square. C. 1821-2, 1835, 1845-6, 1852-3. S. 1824. V.P. 1827, 1839-40. T. 1832-4. P. 1843-4.

1851 JAMES STARTIN, Surgeon to the Hospital for Diseases of the Skin, and Lecturer on Cutaneous Disorders at that Institution; 3, Savile-row, Burlington-gardens.

1852 SHERARD FREEMAN STATHAM, Assistant-Surgeon to University College Hospital; 43, Mortimer-street, Cavendish-square.

Elected

1854 HENRY STEVENS, Resident Medical Officer, St. Luke's Hospital.

1842 ALEXANDER PATRICK STEWART, M.D., Physician to, and Lecturer on Medicine at, the Middlesex Hospital; 74, Grosvenor-street.

1843 ROBERT REEVE STORKS.

1839 ALEXANDER JOHN SUTHERLAND, M.D. F.R.S., Physician to St. Luke's Hospital; 6, Richmond-terrace, Whitehall. C. 1850-1.

1842 JAMES SYME, Professor of Clinical Surgery in the University of Edinburgh; Charlotte-square, Edinburgh.

1854 *FREDERICK SYMONDS, Surgeon to the Radcliffe Infirmary; 32, Beaumont-street, Oxford.

1844 RICHARD WILLIAM TAMPLIN, Surgeon to the Royal Orthopædic Hospital; 33, Old Burlington-street.

1848 THOMAS HAWKES TANNER, M.D., Physician to the Hospital for Women, Soho-square; 10, Charlotte-street, Bedford-square.

1840 THOMAS TATUM, Surgeon to, and Lecturer on Surgery at, St. George's Hospital; 3, George-street, Hanover-square. C. 1852-3.

1835 JOHN COLLEY TAUNTON, Surgeon to the City of London Truss Society, and to the City Dispensary; 48, Hatton-garden, Holborn. C. 1840-1.

1852 ROBERT TAYLOR, M.D., 82, Guildford-street, Russell-square.

1845 THOMAS TAYLOR, Lecturer on Chemistry at the Middlesex Hospital Medical School; 4, Vere-street, Cavendish-square.

1845 *EVAN THOMAS, Manchester.

1839 SETH THOMPSON, M.D., Physician to, and Lecturer on Medicine at, the Middlesex Hospital; 16, Lower Berkeley-street, Portman-square. C. 1849. S. 1850-1.

1842 THEOPHILUS THOMPSON, M.D. F.R.S., Physician to the Hospital for Consumption and Diseases of the Chest; 3, Bedford-square. C. 1855.

1852 HENRY THOMPSON, Surgeon to the St. Marylebone Infirmary; 16, Wimpole-street, Cavendish-square.

Elected

1835 Frederick Hale Thomson, Consulting Surgeon to the Westminster Hospital, and to the West London Institution for Diseases of the Eye; 4, Clarges-street, Piccadilly.

1819 John Thomson, M.D. F.L.S., Physician to the Finsbury Dispensary; 18, Dalby-terrace, Islington. C. 1833. L. 1834-7. V.P. 1850-1.

1850 Robert Dundas Thomson, M.D. F.R.S., Professor of Chemistry at St. Thomas's Hospital; 11, Marlborough-hill, St. John's-wood.

1836 John Thurnam, M.D., Devizes, Wiltshire.

1848 Edward John Tilt, M.D., Physician to the Farringdon Dispensary; 11, York-street, Portman-square.

1834 Robert Bentley Todd, M.D. F.R.S., Physician to King's College Hospital, Professor of Physiology and of General and Morbid Anatomy in King's College, London; 26, Brook-street, Grosvenor-square. L. 1842-6. T. 1850-1. V.P. 1854.

1828 James Torrie, M.D., Aberdeen.

1843 Joseph Toynbee, F.R.S., Aural Surgeon to St. Mary's Hospital, Consulting Aural Surgeon to the Asylum for the Deaf and Dumb, and to the St. George's and St. James's General Dispensary, and Lecturer on Aural Surgery at St. Mary's Hospital Medical School; 18, Savile-row, Burlington-gardens.

1850 Samuel John Tracy, Surgeon-Dentist to St. Bartholomew's and Christ's Hospitals; 28, Old Burlington-street.

1808 Benjamin Travers, F.R.S., Surgeon Extraordinary to the Queen, Surgeon in Ordinary to H.R.H. Prince Albert; 54, Green-street, Grosvenor-square. C. 1810, 1819, 1822-3, 1842, 1847. V.P. 1817-8. P. 1827-8.

1854 Benjamin Travers, Jun., 8, Dover-street, Piccadilly.

1841 Matthew Truman, M.D., 40, Norland-square, Notting-hill.

1855 James Tulloch, M.D., 1, Pembridge-place, Westbourne-grove-west.

1835 John Cusson Turner, M.D., South-terrace, Bexley Heath, Kent.

1845 Thomas Turner, Surgeon to the Royal Manchester Infirmary, and Lecturer on Anatomy; Mosley-street, Manchester.

Elected

1846 ALEXANDER URE, Surgeon to St. Mary's Hospital, and Consulting Surgeon to the Westminster General Dispensary; 18, Upper Seymour-street, Portman-square.

1819 BARNARD VAN OVEN, M.D., Consulting Surgeon to the Charity for Delivering Jewish Lying-in Women; 22, Manchester-square.

1806 BOYER VAUX, M.D.

1839 WILLIAM RANDALL VICKERS, 32, Baker-street, Portman-square.

1810 JAMES VOSE.

1828 BENEDETTO VULPES, M.D., Physician to the Hospital of Aversa, and to the Hospital of Incurables, Naples.

1854 EDWARD WADDINGTON, 3d Staffordshire Regiment; Newcastle-under-Lyne.

1841 ROBERT WADE, Surgeon to the Westminster General Dispensary; 68, Dean-street, Soho.

1823 WILLIAM WAGNER, M.D., Berlin.

1820 THOMAS WALKER, M.D., Physician to the Forces; Morro Velhio, Brasil.

1852 WALTER HAYLE WALSHE, M.D., Professor of the Theory and Practice of Medicine in University College, London, and Physician to University College Hospital; 40, Queen Anne-street, Cavendish-square.

1851 HENRY HAYNES WALTON, Surgeon to the Central London Ophthalmic Hospital, and Assistant-Surgeon to St. Mary's Hospital; 69, Brook-street, Hanover-square.

1852 DANIEL WANE, M.D., 20, Grafton-street, Berkeley-square.

1846 NATHANIEL WARD, Assistant-Surgeon to, and Demonstrator of Anatomy at, the London Hospital; 1, Broad Street-buildings, City.

1845 THOMAS OGIER WARD, M.D., 9, Leonard-place, Kensington.

1821 WILLIAM TILLEARD WARD, Duncannon House, Brighton.

1846 JAMES THOMAS WARE, Surgeon to the Finsbury Dispensary and to the Convalescent Institution; 51, Russell-square.

1811 JOHN WARE, Clifton, near Bristol.

1814 MARTIN WARE, Russell-square. C. 1844-5. T. 1846. V.P. 1853.

1816 *CHARLES BRUCE WARNER, Cirencester, Gloucestershire.

1829 ELIAS TAYLOR WARRY, Wimborne, Dorsetshire.

Elected

1837 THOMAS WATSON, M.D., 16, Henrietta-street, Cavendish-square. C. 1840-1, 1852. V.P. 1845-6.

1847 *THOMAS WATSON, Holbeach, Lincolnshire.

1854 WILLIAM WEBB, M.D., Resident Medical Officer of the Stafford General Infirmary; Wirksworth, Derbyshire.

1840 WILLIAM WOODHAM WEBB, Gislingham, near Thwaite, Suffolk.

1842 FREDERICK WEBER, M.D., Physician to the St. George's and St. James's Dispensary; 44, Green-street, Park-lane.

1835 JOHN WEBSTER, M.D. F.R.S., *Vice-President;* Consulting Physician to the St. George's and St. James's Dispensary; 24, Brook-street, Grosvenor-square. C. 1843-4.

1844 WILLIAM WEGG, M.D., *Librarian;* Physician to the St. George's and St. James's Dispensary; 5, Maddox-street, Hanover-square. L. 1854-5.

1854 THOMAS SPENCER WELLS.

1816 SIR AUGUSTUS WEST, Knt., Deputy-Inspector of Hospitals to the Portuguese Forces; Paris.

1842 CHARLES WEST, M.D., Physician-Accoucheur to, and Lecturer on Midwifery at, St. Bartholomew's Hospital; and Physician to the Hospital for Sick Children; 96, Wimpole-street, Cavendish-square. C. 1855.

1841 THOMAS WEST, M.D. F.L.S., Daventry.

1828 JOHN WHATLEY, M.D.

1849 JOHN WHITE.

1852 JOHN WIBLIN, 73, Morland-place, Southampton.

1840 JOSEPH WICKENDEN, Birmingham.

1824 *WILLIAM JOHN WICKHAM, Surgeon to the Winchester Hospital; Winchester.

1844 FREDERICK WILDBORE, 1, Trafalgar-place-east, Hackney-road.

1837 GEORGE AUGUSTUS FREDERICK WILKS, M.D., Temple-walk, Matlock, Derbyshire.

1840 CHARLES JAMES BLASIUS WILLIAMS, M.D. F.R.S., 49, Upper Brook-street, Grosvenor-square. C. 1849-50.

1829 ROBERT WILLIS, M.D., Barnes, Surrey. L. 1838-41.

1839 ERASMUS WILSON, F.R.S., Consulting Surgeon to the St. Pancras Infirmary; 17, Henrietta-street, Cavendish-square.

Elected

1839 JAMES ARTHUR WILSON, M.D., Physician to St. George's Hospital; 28, Dover-street, Piccadilly. C. 1846-7.

1831 WILLIAM JAMES WILSON, Surgeon to the Manchester Infirmary; Manchester.

1850 *ROBERT STANTON WISE, M.D., Banbury, Oxon.

1825 THOMAS ALEXANDER WISE, India.

1851 JOHN WOOD, King's College, Strand.

1841 GEORGE LEIGHTON WOOD, Surgeon to the Bath Hospital; Queen-square, Bath.

1848 WILLIAM WOOD, M.D., Kensington-house, Kensington.

1843 JOHN WARD WOODFALL, M.D., Physician to the West Kent Infirmary; Maidstone, Kent.

1833 THOMAS WORMALD, Assistant-Surgeon to St. Bartholomew's Hospital; 42, Bedford-row. C. 1839. V.P. 1854.

1842 WILLIAM COLLINS WORTHINGTON, Surgeon to the Infirmary, Lowestoft, Suffolk.

1848 EDWARD JOHN WRIGHT, 5, Kennington-row, Kennington.

[It is particularly requested, that any change of Title or Residence may be communicated to the Secretaries before the 1st of August in each year, in order that the List may be made as correct as possible.]

HONORARY FELLOWS.

(Limited to Twelve.)

Elected

1841 WILLIAM THOMAS BRANDE, F.R.S., Professor of Chemistry at the Royal Institution of Great Britain; Royal Mint, Tower-hill.

1835 SIR DAVID BREWSTER, K.H. LL.D. F.R.S., &c., Corresp. Memb. Institute of France, &c.; St. Andrew's.

1853 BENJAMIN COLLINS BRODIE, B.A., Oxford, F.R.S.; 13, Albert-road, Regent's-park.

1841 ROBERT BROWN, D.C.L. F.R.S., Keeper of Botany, British Museum.

1835 The Very Rev. WILLIAM BUCKLAND, D.D. F.R.S., Dean of Westminster.

1847 EDWIN CHADWICK, late Commissioner of the Board of Health.

1835 MICHAEL FARADAY, D.C.L. F.R.S., Corresp. Memb. Institute of France; Royal Institution.

1841 SIR JOHN FREDERICK WILLIAM HERSCHEL, Bart., D.C.L. F.R.S., Corresp. Memb. Institute of France; Collingwood, Kent.

1835 SIR WILLIAM JACKSON HOOKER, LL.D. FR.S. Royal Botanic Garden, Kew.

1847 RICHARD OWEN, F.R.S., Corresp. Memb. Institute of France; Hunterian Professor to, and Curator of the Museum of, the Royal College of Surgeons of England.

1835 The Rev. ADAM SEDGWICK, A.M. F.R.S., &c., Woodwardian Lecturer, Cambridge.

1841 The Rev. WILLIAM WHEWELL, D.D. F.R.S., Master of Trinity College, Cambridge.

FOREIGN HONORARY FELLOWS.

(Limited to Twenty.)

Elected

1841 G. ANDRAL, M.D., Professor in the Faculty of Medicine, Paris.

1835 CARL JOHAN ECKSTRÖM, K.P.S. and W., Physician to the King of Sweden, First Surgeon to the Seraphim Hospital, Stockholm.

1841 CHRISTIAN GOTTFRIED EHRENBERG, Berlin.

1835 BARON ALEXANDER VON HUMBOLDT, Member of the Institute of France, &c., Berlin.

1841 JAMES JACKSON, M.D., Professor of Medicine in the University of Cambridge, Boston, U.S.

1843 BARON JUSTUS VON LIEBIG, M.D. F.R.S., Professor of Chemistry in the University of Munich, &c.

1841 P. C. A. LOUIS, M.D., Physician to the Hôtel-Dieu, Member of the Royal Academy of Medicine, &c., Paris.

1841 F. MAGENDIE, M.D., Member of the Institute; Physician to the Hospital of the Salpêtrière; Paris.

1847 CARLO MATTEUCCI, Professor in the University of Pisa.

1841 JOHANNES MÜLLER, M.D., Professor of Anatomy and Physiology, and Director of the Royal Anatomical Museum, Berlin.

1841 BARTOLOMEO PANIZZA, M.D., Pavia.

1850 CARL ROKITANSKY, M.D., Curator of the Imperial Pathological Museum at the University of Vienna, &c. &c.

1853 VALENTINE MOTT, M.D., New York.

1835 C. J. TEMMINCK, Director of the Museum of Natural History of the King of Holland, Amsterdam.

1835 FRIEDRICH TIEDEMANN, M.D., Professor of Anatomy and Physiology, Heidelberg.

1841 JOHN C. WARREN, M.D., Professor of Anatomy and Surgery in the University of Cambridge, Boston, U.S.

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THE Council of the Royal Medical and Chirurgical Society deems it proper to state, that the Society does not hold itself in any way responsible for the statements, reasonings, or opinions set forth in the various papers, which, on grounds of general merit, are thought worthy of being published in its Transactions.

PATHOLOGICAL RESEARCHES

INTO

THE DISEASES OF THE EAR.

FIFTH SERIES.

BY

JOSEPH TOYNBEE, F.R.S.,

AURAL SURGEON TO ST. MARY'S HOSPITAL;
LECTURER ON AURAL SURGERY AT ST. MARY'S HOSPITAL MEDICAL SCHOOL;
CONSULTING AURAL SURGEON TO THE ASYLUM FOR THE DEAF AND DUMB,
AND CONSULTING SURGEON TO THE ST. GEORGE'S AND
ST. JAMES'S GENERAL DISPENSARY.

Received Nov. 8th.—Read Nov. 22d, 1853.

In the thirty-second volume of the 'Medico-Chirurgical Transactions,' this society published a paper, by myself, containing the results of 915 dissections of the human ear. In the course of the five years since that paper was written, I have continued to prosecute researches into the pathology of the ear; and the additional dissections may be classified as follows:

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4. Healthy ears 207

In reference to the first class of dissections, viz., those

from deaf persons whom I had seen and examined while living, and the histories of whose cases were then taken, I need scarcely say that, although compared to the other dissections their number is small, they have a much higher value; and they throw more light upon the pathology of deafness than do the other classes of cases the histories of which are unknown. In reality, by means of this class of dissections, the field of pathology may be considered as entered upon; whereas, in the other investigations, only a knowledge of the morbid anatomy of the ear has been acquired.

The course I originally intended to pursue was to give, in a tabular form, the history of each case appertaining to this class; also the result of the examination of the patient during life; the influence of treatment when pursued; and, finally, the details of a careful dissection.

This intention, was, however, soon abandoned; firstly, because its prosecution would have required much too large a space to admit of the paper being brought before this society; and, secondly, because such a plan would not have done justice to the subject, which requires each disease of the ear to be specially studied and illustrated by many cases, and by the aid of anatomical and other investigations.

The course which I have therefore felt it desirable to pursue, is, in the present paper, to give only a tabular view of the morbid appearances found in the 134 diseased ears belonging to this class, and to reserve for separate papers the histories of the cases and other details respecting them.

In a former paper on the pathology of the ear,[1] I stated it to be my conviction "that deafness seldom depends upon obstruction of the Eustachian tube;" I added in a note that the trumpet-shaped extremity of the tube was not often included in the parts removed for dissection, that I was consequently unable to give an opinion respecting it; it nevertheless appeared probable that when the narrow part of the tube was healthy and free from obstruction, the dilated orifice, which is acted upon continually by the muscles of

[1] 'Medico-Chirurgical Transactions,' vol. xxxii, 1849.

the palate, was also healthy. Later researches and further experience have induced me to modify the opinion expressed above. In a paper laid before the Royal Society, I have endeavoured to demonstrate that the faucial orifice of the tube is always shut, except during the momentary act of swallowing, when the tensor and levator palati muscles open the tube and allow mucus to escape from the tympanic cavity, or air to pass in or out. It must be apparent that a thickened condition of the mucous membrane covering the guttural orifice of the tube is liable to cause obstruction, by preventing the muscles from separating the margins of the orifice; and obstruction from this cause does, I believe, not unfrequently take place; at least I am induced to form this opinion from the careful examination of cases, and from the post-mortem inspection of the guttural portion of the tube in many dissections conducted subsequent to my former paper.

Upon examining the subjoined tabular view of the morbid appearances found in the 134 ears, taken from deaf persons whose histories are known, it will be found that diseased conditions of the auditory nerve, or its expansions, are of much greater frequency than in the tables previously published. One reason for this difference is, that in the class under consideration many advanced cases of deafness are to be found.

Table I.

Tabular View of the Morbid Appearances found in 134 *Ears from Deaf Persons whose histories are known.*

Meatus Externus.	Containing a collection of cerumen	11
	Distended and dilated by a collection of cerumen	3
	Distended and dilated by a collection of cerumen and epidermis	1
	Distended and dilated by a collection of cerumen and epidermis; the osseous walls partly absorbed	1
	Osseous wall carious	4
	Osseous wall absorbed in parts	2
	Membranous meatus so much atrophied as to expose the bone	1
	Membranous meatus soft	1
	Membranous meatus soft and red	2
	Membranous meatus soft and detached from the bone	2
	Membranous meatus soft and thick; bone carious	1
	Containing a molluscous tumour; the osseous meatus absorbed in parts	2
	Containing a molluscous tumour which projects into the cerebral cavity	1
	Containing polypi	1
	Containing polypi; the osseous wall being carious	1
Membrana Tympani.	Opaque	8
	Thick	7
	Thick and unyielding, like cartilage	5
	Thick and white	7
	Thick, white, and soft	2
	Thick, white, and tense	5
	Lax	2
	Tense	4
	Vascular	2
	More concave than natural	10
	More concave than natural, and thick	1
	More concave than natural, and soft	1
	So concave as to touch the promontory	8
	Very concave, and adherent to the promontory by membranous bands	5
	Fallen in, and inner surface in contact with the promontory	7
	Outer surface flat	1
	Inner surface adherent to incus	2
	Inner surface adherent to stapes	1
	Calcareous	8
	Wholly absent, apparently from ulceration	5
	Perforated	10
	Circular cartilage exposed	1
	Epidermoid lamina very thick	4
	Epidermoid lamina absent	5
	Dermoid lamina very vascular	1
	Dermoid lamina very thick	1
	Dermoid and fibrous layers absent in parts, apparently from ulceration	2
	Fibrous laminæ destroyed by ulceration in parts	6
	Fibrous laminæ containing pigment-cells	1
	An aperture in all the laminæ closed by cellular tissue	1
	All the laminæ absent in one part except epidermis	2
	Mucous layer very thick	1

Tympanic Cavity.	*Contents.*	A collection of mucus	4
		A collection of blood	1
		A collection of serum	1
		A collection of lymph	3
		A collection of epithelium and oil	1
		A collection of calcareous matter	1
		A collection of cholesterine	1
		A collection of cellular tissue	2
	Mucous Membrane.	Congested	2
		Thicker than natural	15
		Thick and congested	3
		So thick as to conceal the stapes	2
		So thick as to conceal the stapes and incus	1
		Ulcerated	4
	Membranous Bands.	Between malleus and incus	1
		Between stapes and tympanic cavity	2
		Between stapes and incus	1
		Between all the ossicles	13
	Malleus.	Partially disconnected from incus	1
		Fixed	3
		Ankylosed to upper wall of tympanum	2
		Long process detached from membrana tympani	1
		Long process in contact with the promontory	3
		Long process adherent to incus	1
		Long process detached from its body	1
		Long process of malleus and incus absent	1
		Long process of malleus and incus carious	2
	Incus.	Carious	2
		Disconnected from stapes	5
	Stapes.	Base adherent to fenestra ovalis more rigidly than natural	13
		Ankylosed by membrane to the fenestra ovalis	25
		Ankylosed by membrane to the fenestra ovalis, base expanded	4
		Ankylosed by bone to the fenestra ovalis	18
		Ankylosed by bone to the fenestra ovalis, the base being expanded	6
		Ankylosed by bone to the fenestra ovalis, an exostosis around the fenestra ovalis	2
		Base projects into the vestibule	1
		Partly absorbed	1
	Walls.	Carious	4
		Carotid canal contracted	1
		Tensor tympani muscle atrophied	7
Eustachian Tube.		Stricture in osseous parts	1
		Stricture in cartilaginous part	2

Internal Ear.		Auditory nerve atrophied	5
		Auditory nerve atrophied and congested	2
		Auditory nerve, vestibular portion atrophied	1
		Auditory nerve in a state of suppuration	1
	Vestibule.	Membranous labyrinth thicker than natural	3
		Membranous labyrinth atrophied	14
		Membranous labyrinth congested	2
		Membranous labyrinth containing blood	1
		Membranous labyrinth containing pus	1
		Membranous labyrinth containing red serum	1
		Membranous labyrinth containing an opaque fluid	2
		Membranous labyrinth, otoconie absent	3
		Membranous labyrinth, otoconie more abundant than natural	7
		Membranous labyrinth, fluid deficient in quantity	2
		An exostosis from the walls of the vestibule.	
	Cochlea.	Blood-vessels distended	2
		Cochlearis muscle ? red	1
		Cochlearis muscle hypertrophied	1
		Black pigment very abundant	3
		Fluid opaque	2
		Fluid red	1
		Nerves atrophied	2
	Semicircular Canals.	Obstructed by otoconie	2
		Otoconie more abundant than natural	2
		Containing pus	1
		Containing calcareous matter	2
		Containing blood	1
		Carious orifice from tympanum into the superior canal	1
		Membrane of the fenestra rotunda thick	4
		Membrane of the fenestra rotunda thick and tense	1

PATHOLOGICAL RESEARCHES

INTO

THE DISEASES OF THE EAR.

SIXTH SERIES.

Previous to entering upon the second branch of these researches, viz., that in which the history of the cases, together with the symptoms and appearances ascertained to have existed during the life of the patients, will be presented in juxtaposition with the details of dissections, it has appeared to me desirable to give a summary view of the result of all my investigations into the morbid anatomy of the ear. Before doing so, I may be permitted to say a few words respecting the study of diseases of the ear.

It was formerly a general opinion among medical men, and one even now not unfrequently expressed, that the branch of surgery comprising the study of the diseases of the ear presents difficulties almost insurmountable to its practical cultivation. But surely the difficulties which an inquirer has here to encounter are not more formidable than those which have been successfully surmounted in other departments of medicine. The ear is not more complicated in its structure, nor less accessible, than many other organs respecting whose diseases we are greatly enlightened. Of the heart, lungs, and brain, no portion is open to direct inspection; while at least two of the leading divisions of the ear, viz., the meatus externus and the membrana tympani, are distinctly visible by the aid of a strong light, and the condition of the Eustachian tube, together with that of the tympanic cavity, can easily be explored. As a guide to our diagnosis of the state of the internal ear, we have not only the history of the case and the condition of the patient, but a variety of positive and negative symptoms.

My conviction therefore is, that the difficulties of the subject are not greater, but that the same degree and amount of research which have thrown so much light upon the nature of the diseases of other deep-seated organs, have not yet been sufficiently brought to bear on the study of the diseases of the ear. The most cursory reflection must, indeed, suggest that an accurate knowledge of the structure and morbid anatomy of the ear must be a requisite foundation on which any scientific and practical results should be based; and yet writers have attempted to understand and explain the entire subject, with but a very limited and often incorrect acquaintance with the structure and functions of even the leading parts of the organ, and with scarcely any knowledge of their morbid states. That such attempts cannot fail to be unsuccessful is almost self evident; but I will add a few remarks in illustration.

The ceruminous glands were considered as modifications of the sebaceous, until Kölliker, in some recent observations, showed them to be identical with the perspiratory. The existence of the dermoid layer of the membrana tympani, by which the epidermoid layer is secreted, and which plays so important a part in aural diseases, more especially in two of them, hitherto confused under the useless term otorrhœa, was till lately utterly unknown. Again, the two fibrous laminæ of the same organ, which are really quite distinct in their structure, attachments, and relations, have been confounded together as one membrane, and even been considered as muscular. The ligament, and the mode of its attachment, whereby the membrana tympani is maintained in a quiescent state of gentle tension, and which also performs a very prominent part in some diseased conditions of this organ, have been only recently discovered; neither has the closed condition of the guttural orifice of the Eustachian tube, except during the momentary act of deglutition, until now been pointed out.

A conviction of the exceedingly limited nature of our knowledge of the morbid anatomy of the ear, was forced upon me, when, thirteen years ago, I commenced my dis-

sections, and which have demonstrated, I think, that the existence of some of the most common, and yet most important morbid conditions of the ear had not previously been even suspected. Of these I will merely mention the presence of osseous and molluscous tumours in the external meatus, the various diseased states of the dermoid layer of the membrana tympani; the ulceration of its fibrous laminæ, having among its singular results, obliteration of the tympanic cavity; the existence of membranous bands connecting the ossicles to each other, to the membrana tympani, and to the walls of the tympanum; the various morbid states of the mucous membrane of the tympanum, and lastly ankylosis of the stapes to the fenestra ovalis.

As further proofs of the neglect in which this department has been left, it may be noted, that until now all cases of pain in the ear have been classed under the general term otitis; and all cases of discharge from the ear, whatever their origin or source, have been simply styled cases of otorrhœa. Lastly, the not unfrequent cases of disease extending from the several parts of the ear to the cerebrum, cerebellum, and medulla oblongata, and which exhibit great diversity in their causes, nature, and progress, have been treated merely as instances of caries of the petrous bone involving the brain.

The inference fairly deducible from a consideration of the above-named facts, seems to be, that investigations into the nature and treatment of the diseases of the ear will be fruitful in valuable results if they are steadily pursued in an earnest and patient spirit.

The 1523 dissections, from the descriptions of which the details in the following table have been taken, may be classified as follows:—

136 diseased ears from deaf persons with histories, etc.
223 diseased ears from deaf persons without histories.
654 diseased ears from persons without histories.
510 healthy ears.

1523 total.

TABLE II. *Diseased Ears from Deaf Persons whose histories were unknown* (41).

† This sign indicates that the part was not dissected, for the sake of preserving the pathological specimen.

No. of the Dissection.	Sex, Age, &c.	RIGHT EAR.					LEFT EAR.				
		Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.	Meatus Externus.	Membrana Tympani	Cavitas Tympani.	Eustachian Tube.	Internal Ear.
927 928	Woman, æt. 22.	Thicker than natural at the circumference; very concave externally; connected to the inner wall of tympanum by membranous bands.		Fibro-mucous membrane much thicker and softer than natural.		—	—	In the same state as the right ear.	In the same state as the right ear.	—	—
942 943	Woman, æt. 50; deaf in the left ear only.	—	—	The orbicular process disconnected from the incus and attached to the stapes.		—	—	Very concave externally, thick and white; inner surface adherent to the promontory.		—	—
1020	Man, æt. 19, deaf in the left ear only; right ear healthy	—	—	—	—	—	—	The fibro-mucous membrane is so very thick that the stapes is buried in it; its surface is covered by crystals of cholesterine.		—	—

1024 1025	Man, æt. 50; deaf in the left ear only; right ear healthy. When young he had caries of the mastoid process of the left ear.	—	—	—	—	—	Lower part absent; upper part adherent to the promontory.	Incus and stapes disconnected; an exostosis grows from long process of malleus; at the upper and anterior part of the mastoid process is a fossa from which dead bone had apparently been removed.		—
1026 1027	Man, æt. 74.	—	—	Stapes firmly fixed to the border of the fenestra ovalis.	—	—	—	More concave than natural; opaque.	Membranous bands connect the ossicles together; base of the stapes expanded and projecting into the cavity of the vestibule.		—
1038 1039	Man, æt. 79.	—	Opaque.	Stapes completely surrounded by membranous bands.	—	—	—	Opaque.	Stapes firmly ankylosed to the incus.	—	—
1048	Man, æt. 70.	—	Dull, and having a leaden hue.	—	Nearly full of blood mixed with lymph and mucus.	†	—	—	—	—	—
1063	Man, æt. 55; insane; deaf in the left ear only; right ear healthy	—	—	—	—	—	—	Thicker and more flat than natural; it is firmly adherent to the promontory.		—	—

No. of the Dissection.	Sex, Age, &c.	RIGHT EAR.					LEFT EAR.				
		Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.	Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.
1066 1067	Man, æt.80; very deaf.	—	—	The base of the stapes is firmly fixed to the fenestra ovalis by ligamentous ankylosis; the crura are much atrophied.		—	—	—	In the same state as the right ear.	—	—
1075 1076	Man, æt.75; hard of hearing only.	—	The fibrous laminæ of the posterior and superior third have been destroyed by ulceration; the mucous lamina which alone remains is thick and adherent to the stapes; the posterior and inferior two thirds are thick and white.			†	—	In the same state as that of the right ear.	Stapes detached from the incus, and firmly attached to the membrana tympani.		†
1081 1082	Man, æt.40; idiotic.	—	Very tense.	Malleus ankylosed to the incus; base of stapes expanded, and adheres more firmly than natural to the fenestra ovalis.		—	Dilated; distended by cerumen.	Tense and atrophied.	In the same state as the right ear.	—	—
1083 1084	Woman, æt. 73; dull of hearing.	—	Whiter and thicker than natural.	—	—	—	—	Whiter and thicker than natural.	—	—	—
1253 1254	Man, æt. 80.	A molluscous tumour at the superior and posterior part, causing ab-		—	—	—	A molluscous tumour at the posterior part of the meatus which had caused absorption of the bony wall; the			—	—

		sorption of the bone, an orifice in the membrana tympani, and an aperture into the mastoid cells.					tumour projected through the tympanic cavity and mastoid cells as far as the central cavity, where it was in contact with the dura mater.				
1281 1282	Man, æt. 75.	Very concave externally; inner surface adherent to promontory; orifice at upper part, contains calcareous deposits.		Contains numerous membranous bands; malleus detached from the membrana tympani.		†	—	Fallen in and lies nearly flat against the promontory.	Fibro-mucous membrane very thick; the cavity contains yellow mucus.	—	†
1290 1291	Man, adult.	Distended by hard cerumen; surface of the posterior osseous wall absorbed at parts.	Opaque; outer surface very concave and adherent internally to the promontory; an orifice at the superior and posterior part.	—	—	†	Distended by cerumen.	Very thick and concave externally; inner surface adherent to the promontory; an orifice.	—	—	—
1324 1325	Man, æt. 77.	—	—	Stapes firmly ankylosed to the fenestra ovalis.	—	—	—	—	Stapes firmly ankylosed to the fenestra ovalis.	—	—
1436 1437	Man, æt. 67; not very deaf.	—	More concave than natural.	The base of the stapes partially ankylosed by ligaments to the fenestra ovalis; the ossicles are connected by bands.		—	—	More concave than natural.	In the same state as the right ear.	—	—

No. of the Dissection.	Sex, Age, &c.	RIGHT EAR.					LEFT EAR.				
		Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.	Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.
1440	Man, æt. 68; left ear healthy.	—	Absent; has been destroyed by ulceration; the lower two thirds of the long process of the malleus absent.	Fibro-mucous membrane ulcerated; cavity full of thick soft membrane and offensive pus; upper osseous wall of tympanum of a green colour.	—	—	—	—	—	—	—
1450 1451	Man, æt. 76; had been becoming slowly dull of hearing during some years.	—	White, like parchment; more concave than natural externally.	Contains many membranous bands; the stapes is ankylosed by ligaments to the fenestra ovalis, and requires to be pressed upon firmly in order to make it move; malleus and incus less moveable than natural.			—	—	In the same state as the right ear.	—	—
1454	Man, æt. 77; deaf in right ear, left ear healthy.		Opaque in parts.	Full of mucus; stapes firmly ankylosed to the fenestra ovalis.		—	—	—	—	—	—
1458 1459	Man, æt. 80.	—	Very concave externally; fibrous laminæ thick and yellow.	Fibro-mucous membrane thick; cavity full of viscid mucus.	—	—	—	Very concave externally; fibrous laminæ thick and yellow.	Full of mucus; fibro-mucous membrane thick; the stapes is completely ankylosed to the fenestra ovalis.	—	—

1473 1474	Man, æt. 74.	—	—	The stapes projects into the cavity of the vestibule.	Much larger than natural.	—	—	—	The stapes projects into the cavity of the vestibule.	Much larger than natural.	—
1500 1501	Man, æt. 70; hard of hearing.	—	The posterior half absent, excepting the epidermis and the dermis; the anterior half is thick and white.	The long process of malleus drawn inwards; the long process of incus absent; the stapes not attached to any ossicle.	—	—	—	In the same state as the right ear, excepting that there is a large orifice in the membrana tympani.	—	—	—

Table III.

Tabular View of the Condition of the 41 *Diseased Ears from Deaf Persons whose histories are unknown.*

Meatus Externus.	Containing a collection of cerumen, the osseous tube being dilated	1
	Containing a collection of cerumen, the osseous tube being absorbed in parts	1
	Containing molluscous tumours	2
Membrana Tympani.	Surface dull	1
	Opaque	3
	More concave externally than natural	2
	More concave externally than natural, and opaque	2
	More concave externally than natural, and thick	2
	More concave externally than natural, and connected by bands to promontory	2
	Opaque and thick	2
	Tense and atrophied	1
	Very tense	1
	Fibrous laminæ in parts absent, as if destroyed by ulceration	2
	Thick and concave, and adherent to the promontory	3
	Perforated and thick	1
	Thick, concave, perforated, and adherent to the promontory	2
	Perforated by molluscous tumours	2
Cavitas Tympani. — *Contents.*	A collection of mucus, blood, and lymph	1
	Cholesterine and mucus	1
	Pus; the mucous membrane ulcerated	1
	Mucus; the mucous membrane very thick	2
	Mucous membrane thick	4
	Bands of adhesion around the ossicles	6
Cavitas Tympani. — *State of Ossicles.*	Malleus ankylosed to incus	2
	Malleus detached from membrana tympani	1
	Malleus, exostosis from manubrium	1
	Incus disconnected from stapes	2
	Incus, long process absent	1
	Stapes disconnected from incus, and attached to membrana tympani	1
	Stapes attached to fenestra ovalis more rigidly than natural	7
	Stapes, base expanded and fixed more rigidly than natural	2
	Stapes, base expanded and projecting into vestibule	1
	Stapes, base projecting into vestibule	2
	Stapes, base ankylosed to fenestra ovalis	4
	Stapes ankylosed to incus	2
	Stapes detached from any other bone	2
Eustachian Tube.	Very large	2

TABLE IV. *Diseased Ears, from persons whose histories were unknown* (226).

No. of the Dissection.	Sex, Age, &c.	RIGHT EAR.					LEFT EAR.				
		Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.	Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.
915*a* 916	Boy, æt. 4.	—	Opaque.	Contained viscid mucus; fibro-mucous membrane vascular and thick.		—	—	Opaque.	In the same state as the right ear.	—	—
921 922	Man, æt. 20; died from epilepsy.	—	—	Fibro-mucous membrane very vascular.	—	An exostosis projects from the upper wall of the meatus internus.	—	—	Fibro-mucous membrane more vascular than natural.	—	In the same state as the right ear.
929 930	Man, æt. 75.	—	—	Membranous bands connect the ossicles; the stapes is attached to the margin of the fenestra ovalis much more firmly, and is less moveable, than natural.		—	—	—	In the same condition as the right ear.	—	—

No. of the Dissection.	Sex, Age, &c.	RIGHT EAR.					LEFT EAR.				
		Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.	Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.
931 932	Woman, æt. 19; died from small-pox; not deaf.	—	—	Full of viscid mucus; fibro-mucous membrane very thick; stapes almost wholly buried.		—	—	—	In the same state as the right ear.	—	—
935 936	Woman, æt. 60; died from fever; not deaf.	—	—	Fibro-mucous membrane more red and thick than natural.	—	—	—	Presents an orifice about a line and a half in diameter.	In the same state as the right ear.	—	—
938 939	Woman, æt. 50.	—	Hazy	Canal for the portio dura nerve incomplete.	—	—	—	Hazy	Contains viscid mucus; fibro-mucous membrane thicker than natural.		—
941 942	Boy, æt. 3½	—	Much flatter than natural, of a dark leaden hue.	Fibro-mucous membrane very thick; incus disconnected from stapes and nearer to the mastoid cells than natural; the neck of the stapes does not present any articulating surface.			—	In the same state as the right ear.	In the same state as the right ear.	—	—
962	Woman, æt. 57; insane; right ear healthy.	—	—	—	—	—	—	—	A small membranous band, connects the stapes to the wall of the tympanum.		

966	Man, æt. 24; insane; right ear healthy.	—	—	—	—	—	—	—	Contains a small quantity of thick white mucus.	—
998	Woman, æt. 19; died from consumption; right ear healthy.	—	—	—	—	—	—	—	The fibro-mucous membrane thicker than natural; the blood-vessels are distended with blood.	
1000	Man, æt. 27; died from fever; right ear healthy.	—	—	—	—	—	—	—	The fibro-mucous membrane is more vascular than natural.	
1001 1002	Woman, æt. 60; died from pericarditis.	—	—	Contains a large quantity of viscid mucus; the fibro-mucous membrane thick; stapes attached to the fenestra ovalis more firmly, and is less moveable than natural.		—	—	—	A firm band connects the long process of the incus to the malleus.	—	Otoconie more abundant than usual.
1007	Man, æt. 69; insane; left ear healthy.	—	—	—	The membrane of the fenestra rotunda is opaque and thick; a broad vascular membrane divides the vestibule; a soft exostosis projects from its wall.		—	—	—	—	—
1015 1016	Man, æt. 57; right ear healthy.	—	—	—	—	—	—	—	The long process of the incus is carious, and disconnected from stapes; the stapedius muscle atrophied.	—

No. of the Dissection.	Sex, Age, &c.	RIGHT EAR.					LEFT EAR.				
		Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.	Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.
1022 1023	Man, æt. 48.	—	Epidermoid lamina very thick.	Contains mucus; ossicles connected by bands; stapes ankylosed to the fenestra ovalis; membrana fenestræ rotundæ thick.		Lamina spiralis of cochlea redder than natural.	—	Thick and vascular; connected to the stapes by a membranous band.	The fibro-mucous membrane thick; stapes ankylosed.	Membranous labyrinth thicker than natural; cochlearis muscle atrophied.	
1036 1037	Man, æt. 40.	Very concave externally; its inner surface nearly touches the promontory, to which it is attached by a membranous band.		Lower extremity of incus absent.	—	—	—	White and thick; the mucous layer hypertrophied.	Stapes surrounded by membranous bands, and more firmly attached to the fenestra ovalis than is natural.		—
1043	Man, æt. 80; right ear healthy.	—	—	—	—	—	Contains a collection of cerumen.	—	Stapes surrounded by bands of adhesion.	—	—
1054 1055	Man, æt. 70.	An osseous tumour projects from both the anterior and posterior walls.	—	—	—	—	Cavity much diminished by the presence of osseous tumours.	—	A portion of the osseous wall between the mastoid cells and lateral sulcus has been absorbed, so that the mucous membrane of the mastoid cells was in contact with the lateral sinus.		—

1056 1057	Woman, æt. 64.	—	—	—	Its guttural portion is red, the vessels being distended; the mucous membrane is soft.		—	—	—	In the same state as the right ear.	—
1060 1061	Man, æt. 66.	—	Thicker than natural.	The stapes is not so moveable as natural.	—	—	—	Thicker than natural.	In the same state as the right ear.	—	—
1064 1065	Woman, æt. 25; died from pleuritis.	—	More concave than natural externally.	The fibro-mucous membrane is very thick, soft, and red; its vessels being distended.		—	—	More concave externally than natural.	In the same state as the right ear.	—	—
1087 1088	Man, æt. 68.	—	Thicker than natural.	The base of the stapes is expanded and less moveable than natural.		—	—	More white and thick than natural.	In the same state as the right ear.	—	—
1091 1092	Man, æt. 72.	—	Rather thicker than natural.	The base of the stapes is not so moveable as natural.	—	—	—	Thicker and whiter than natural.	In the same state as the right ear.	—	—
1096	Man, æt. 59; right ear healthy.	—	—	—	—	—	There is a slight bulging of the anterior and posterior osseous walls.	Thicker than natural; at one part is a cartilaginous spot.	The base of the stapes projects slightly into the vestibule, and it is not so moveable as natural.		
1097 1098	Man, æt. 46.	—	—	The ossicles are connected by delicate membranous bands.	—	—	—	Externally, more flat than natural; the inferior third of the handle of the malleus is disconnected from the membrana tympani.		—	—

No. of the Dissection.	Sex, Age, &c.	RIGHT EAR.					LEFT EAR.				
		Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.	Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.
1099 1100	Man, æt. 79.	—	—	The stapes is so firmly fixed in the fenestra ovalis, that when the tensor tympani muscle is pulled, the stapes does not move.		—	—	—	In the same state as the right ear.	—	—
1103 1104	Man, æt. 65.	—	—	The orbicular process is disconnected from the incus, and ankylosed to the stapes.		—	Full of cerumen.	—	—	—	—
1105 1106	Man, æt. 23; died from smallpox on the eleventh day of the eruption.	Of a dark colour; surface shines.		Contains a small quantity of blood mixed with mucus; fibro-mucous membrane congested.		Membranous tube soft; contains a small quantity of mucus.		Mucous layer thicker than natural.	Contains mucus.	—	—
1107 1108	Man, æt. 41; died from smallpox on the fourth day of the eruption.	Distended by cerumen, which had caused absorption of the wall of the meatus at the upper and inner part.	Fibrous laminæ absent at the upper third; the mucous layer adherent to the promontory, and formed a septum in the tympanum.	Long process of incus absent; blood filled the posterior part of the tympanum.	—	—	—	—	Mucous membrane congested; blood effused beneath that portion of it covering the stapes.	—	—

1109 1110	Man, æt. 41; died suddenly.	—	All the tissues of each ear distended by blood.	—	—	†	Only one half its natural size; an osseous tumour grew from the anterior and posterior wall.	An orifice three fourths of a line long and one fourth of a line broad, exists in the bone between the mastoid cells and cavity of the cerebellum.	—	
1116	Man, æt. 70; right ear healthy.	—	—	—	—	—	—	All the laminæ destroyed, except the epidermis over a space about a line in diameter.	—	—
1119 1120	Man, æt. 67.	—	—	The inferior extremity of the long process of the incus absent; the orbicular process is attached to the stapes only; the canal for the portio dura nerve incomplete, and the nerve is in contact with the mucous membrane.			—	Thick and white.	The malleus and incus firmly ankylosed by ligaments; the inferior extremity of the incus absent; stapes less moveable than natural.	The vestibule contained an opaque fluid; fluid of cochlea red.
1121 1122	Man, æt. 80.	—	Thicker than natural.	—	—	—	—	Thicker than natural.	—	—	—
1124 1125	Man, æt. 62.	—	More tense than natural.	Membranous bands connect the malleus, incus, and membrana tympani, and conceal the stapes.		—	—	More tense than natural.	In the same state as the right ear.	—	Black pigment-cells very abundant in cochlea.
1146 1147	Man, æt. 75.	Contained several hairs.	Epidermoid layer very thick; the part posterior to the malleus, lax and shrivelled; when the tympanum was distended with air this lax part bulged outwards, but it did not regain its natural form when the pressure was removed.			†	Contained several hairs.	In the same state as the right ear.	—	—	Each carotid canal is slightly contracted. †

No. of the Dissection.	Sex, Age, &c.	RIGHT EAR.					LEFT EAR.				
		Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.	Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.
1148 1149	Man, æt. 65.	Distended by cotton wool; lining membrane very vascular.	—	The stapes was so firmly attached to the fenestra ovalis, that when an attempt was made to withdraw it, a portion of the base remained.		—	Distended with cerumen.	—	Stapes much smaller than natural; the space between the crura is only two thirds its natural size; the base is also small; the fenestra ovalis partly closed by bony deposit.		—
1150 1151	Man, æt. 60.	—	More concave externally than natural; thick, opaque.	—	—	The carotid canal is so contracted as to be only half its usual size. †	—	Thick and opaque; at the anterior part is a patch of calcareous matter; the inner surface connected to promontory by membranous bands.		—	†
1152 1153	Man, æt. 60.	There is a bulging of the anterior and posterior walls, whereby the calibre of the tube is much diminished.			—	†	In the same state as the right ear.	—	—	—	†
1154 1155	Man, æt. 54.	—	Thicker and more flat than natural; the lower half white, like parchment.	Contains mucus; the fibro-mucous membrane is thicker than natural; stapes less moveable than usual; the layer of bone between the tympanum and fossa jugularis incomplete.		—	Lining membrane soft and red; upper osseous wall near the membrana tympani presents an orifice one line and three fourths long, and a line broad.	Flat, thick, and white.	Contains mucus; investing membrane thicker than natural; stapes less moveable than usual.		†

1156 1157	Man, æt. 65.	—	Central part white and thick, adherent to the incus by membranous bands.	The stapes was so firmly attached to the border of the fenestra ovalis, that upon attempting to withdraw it a portion of the base remained.		The cochlea contains many cells full of black pigment.	Very large, and distended by cerumen and epidermis; anterior wall thin, and near the membrana tympani there is an orifice; posterior wall partly absorbed, and an orifice communicates with the mastoid cells.	—	—	†
1160	Man, æt. 69; right ear healthy.	—	—	—	—	—	The orifice is nearly twice as large as natural; the inferior and posterior part being occupied by a molluscous tumour, which projected backwards into the mastoid cells, through an orifice in the osseous walls of the meatus; a portion of the tumour, as large as a horse-bean, was lodged in the mastoid cells.		—	—
1163 1164	Man, æt. 70.	—	At the upper and posterior part is a thick spot like cartilage.	—	—	†	—	Thicker than usual; this thickness was dependent upon hypertrophy of the dermoid lamina, the other laminæ being healthy.	—	—
1165	Man, æt. 61; left ear healthy.	—	The fibrous laminæ of the posterior half are absent; the mucous layer has fallen inwards, and is attached to the stapes and the long process of the incus.		—	†	—	—	—	—

No. of the Dissection.	Sex, Age, &c.	RIGHT EAR.					LEFT EAR.				
		Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.	Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.
1167	Man, æt. 70; right ear healthy.	—	—	—	—	—	—	—	—	A tumour half an inch long, and four lines broad, is attached to the internal auditory nerve.	
1171 1172	Man, æt. 67.	Contracted; the anterior and posterior walls present bony protuberances.	Red, tense, and thick.	—	—	†	In the same state as the right ear.	—	—	—	†
1173 1174	Man, æt. 70.	—	More concave and tense than natural; the epidermoid layer thick and opaque; the inner surface connected to the promontory by bands; the ossicles are not so moveable as natural.				—	In the same state as the right ear.	Stapes less moveable than natural.	—	—
1179 1180	Man, æt. 71.	An orifice about two lines long and a line and a half broad, allows of a communication between the posterior part of the meatus and the mastoid cells.	Flat externally; of an oval shape, white and thick; upper part not attached to the bone.	Full of a dark-coloured fluid.	—	—	Communicates by means of a carious orifice with the upper part of the tympanum.	Superior portion not attached to bone.	—	—	—

1182	Man, æt. 60; right ear healthy.	—	—	—	—	—	—	—	—	—	The scala vestibuli cochleæ, near its opening into the vestibule, is smaller than natural.
1183 1184	Man, æt. 75.	The osseous walls near to the membrani tympani are rough.	The upper four fifths are white, like cartilage.	—	—	—	Distended by cerumen.	Thick and white.	—	—	—
1187 1188	Man, æt. 65.	Distended by cerumen.	Very concave externally; thick and white; at the upper and posterior part is a depression about a line in diameter, caused by the absence of the radiate fibres and the falling inwards of the circular fibres; the cartilaginous ring is drawn out of its groove, and is not attached to the bone.				Distended by cerumen.	Perforated by an orifice about a line in diameter at its posterior and upper part.		—	—
1189 1190	Man, æt. 78.	Much smaller than natural.	—	—	—	—	—	—	Stapes attached to the fenestra ovalis more firmly than natural.		—
1193 1194	Man, æt. 60.	—	More concave externally than natural.	The lower wall separating it from the fossa jugularis is formed by a membrane in which there is a small plate of bone.		—	—	More concave externally than natural.	—	—	—
1195 1196	Man, æt. 63.	—	Contained numerous pigment-cells.	—	—	—	—	Contained numerous pigment cells.	—	—	—

No. of the Dissection.	Sex, Age, &c.	RIGHT EAR.					LEFT EAR.				
		Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.	Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.
1198	Man, æt. 35; right ear healthy.	—	—	—	—	—	Dermis more vascular than natural.	Dermoid layer very vascular, and thick.	—	—	—
1200	Man, æt. 44; right ear healthy.	—	—	—	—	—	—	Dermoid layer thick, soft, and vascular.	Small orifices in the bone allowed a communication between the mastoid cells and lateral sinus.		—
1201 1202	Man, æt. 62.	—	More concave externally than natural; surface dull.	—	—	—	Blood-vessels of dermis large, and distended.	Blood-vessels of dermoid layer large and distended; at the upper part they are continuous with the vessels of the dermis of the meatus.		—	—
1203 1204	Man, æt. 56.	At that part of the floor near the orifice is a considerable depression, as if there had been necrosis.			—	†	A depression in the floor, and the cancellous structure is exposed.	—	—	—	†
1212 1213	Man, æt. 50.	—	Nearly all destroyed; a remnant is attached to the stapes.	Contains numerous membranous bands, which connect the ossicles; the long processes of the incus and malleus have been absorbed.		†	—	—	—	—	†

1214	Man, æt. 103; left ear healthy.	A molluscous tumour is attached to the inner and lower part, which has caused absorption of the bone.		—	—	†	—	—	—	—	—
1216 1217	Man, æt. 69.	Distended by cerumen; lower wall of bone partly absorbed.	Thick, flat, and white; connected to the inner wall of the tympanum by bands of membrane.	Fibro-mucous membrane thick and red; contains yellow mucus.	—	†	Contains cerumen and epidermis; an orifice as large as a pea exists at the lower part.	Dull; of a yellow colour; connected to the inner wall of the tympanum by membranous bands; the dermoid layer is detached from the radiate fibrous layer.		—	†
1223 1224	Man, æt. 74.	—	Perforated anteriorly by a large orifice; remaining portion thick and yellow; the canalis caroticus is much contracted in size.		—	†	The bone at the upper and inner part is absorbed, and the upper border of the membrana tympani is free.	Very concave externally; of a yellow colour; anteriorly to the malleus the fibrous laminæ have been destroyed; the layer composed of mucous membrane is the only one remaining.	Full of bands of adhesion; the carotid canal is contracted.	—	†
1227 1228	Man, æt. 85.	—	Extremely thin, excepting around the malleus where it is thick and of a yellow colour.	—	—	†	—	Very thin and flat; the handle of the malleus is detached from it.	—	—	†

No. of the Dissection.	Sex, Age, &c.	RIGHT EAR. Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.	LEFT EAR. Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.
1230	Man, æt. 68; right ear healthy; had a discharge for some time from the left ear, and portions of dead bone had been removed from it.			—	—	†	Nearly full of cerumen and epidermis; the bone forming the posterior wall was rough, and partly absorbed.			—	—
1232	Man, æt. 78; right ear healthy.	—	—	—	—	†	Contains three molluscous tumours; one at the lower part near to the orifice, a second in the substance of the upper wall near to the membrana tympani, and which projected into the tympanum; a third is in the lower part of the posterior wall.				—
1234	Man, æt. 57; right ear healthy.	—	—	—	—	†	A rounded osseous growth at the posterior part.	—	—	—	—
1235 1236	Man, æt. 63.	—	—	The stapes is not so moveable as natural.	—	—	—	—	The stapes is not so moveable as natural.	—	—
1238	Man, æt. 73; right ear healthy.	—	—	—	—	— of cerumen; posterior bony wall rough, and partly absorbed.	Dilated; contains a collection	Very concave externally; the cartilaginous ring is exposed from the dilated condition of the meatus.			—

1239 1240	Man, æt. 67.	Distended by cerumen.	Surface uneven; very concave externally.	—	—	†	Distended with cerumen; very much dilated; the anterior and posterior walls are partially absorbed, and the cerumen projects into the cavity of the mastoid cells; the lower wall is also absorbed, and the cerumen separated from the jugular vein by membrane only.				†
1241 1242	Man, æt. 63.	—	The dermoid and epidermoid layers are much thicker than natural.		—	—	—	In the same state as the right ear.	—	—	—
1247 1248	Man, æt. 55.	At the lower part, near the membrani tympani, the bone is carious.		—	—	—	The dermoid and periosteal layers of the membranous meatus much atrophied, and the bone is exposed in parts.			—	—
1249	Girl, æt. 11 months; left ear healthy.	Membranous meatus ulcerated, bone diseased.	—	—	—	—	—	—	—	—	—
1259	Man, æt. 64; left ear healthy.	—	—	—	—	The upper part of the superior osseous semicircular canal is absent.		—	—	—	—
1273 1274	Man, æt. 72.	—	—	The base of the stapes is not so moveable as natural.		—	—	—	The base of the stapes is not so moveable as natural.		—
1275 1276	Man, æt. 75.	—	—	The base of the stapes is not so moveable as natural.		—	—	—	The base of the stapes is not so moveable as natural.		—
1283	Man, æt. 67; left ear healthy.	—	Fallen inwards, so that its inner surface is in contact with the promontory.		—	—	—	—	—	—	—
1288	Man, æt. 71; left ear healthy.	—	Very concave externally; the inner surface is attached to the promontory.			—	—	—	—	—	—

No. of the Dissection.	Sex, Age, &c.	RIGHT EAR.					LEFT EAR.				
		Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.	Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.
1292	Man, age not known.	—	At the anterior and inferior part perforated by an orifice.	Contains mucus; fibro-mucous membrane thick.	—	—	—	—	—	—	—
1293 1294	Man, æt. 51.	The cavity is much diminished by the bulging of the posterior osseous wall.		—	—	—	In the same state as the right ear.	Of a dark, leaden hue; very concave externally; an orifice at the anterior part.	Nearly full of membranous bands, which connect the membrana tympani to the malleus and promontory.		—
1295 1296	Man, æt. 83.	—	—	The base of the stapes is not so moveable as natural.	—	—	—	—	In the same state as the right ear.	—	—
1297 1298	Man, æt. 76.	—	Very concave externally; connected to the promontory by membranous bands; lower part of long process of malleus detached.		—	—	—	In the same state as the right ear.	—	—	†

XXXVIII.	1301 1302	Man, æt. 56.	—	Much thicker than natural.	Fibro-mucous membrane very thick; covered by a layer of lymph, which contains blood-vessels.		—	—	—	In the same state as the right ear.	—	—
	1303 1304	Man, æt. 70.	Distended by cerumen.	—	—	—	—	Distended by cerumen.	—	—	—	—
	1305 1306	Man, æt. 80.	—	—	The stapes is less moveable than natural.	—	—	—	Has been destroyed by disease.	Fibro-mucous membrane very thick; stapes less moveable than natural.		—
	1307 1308	Man, æt. 60.	—	Perforated.	—	—	—	—	Perforated.	—	—	—
	1309 1310	Man, æt. 68.	—	—	The base of the stapes is ankylosed to the fenestra ovalis.	—	—	—	—	Stapes in the same state as the right ear.	—	—
	1311 1312	Man, æt. 56.	The osseous posterior wall has a considerable bulging at its lower part.	—	—	—	†	In the same state as the right ear.	—	—	—	†
	1313 1314	Man, æt. 72.	—	—	The base of the stapes is ankylosed to the fenestra ovalis.	—	—	—	—	Stapes in the same state as the right ear.	—	—
∞	1318	Man, æt. 63; right ear healthy.	—	—	—	—	—	—	More rigid than natural.	The stapes and the other ossicles are less moveable than natural.	—	—

No. of the Dissection.	Sex, Age, &c.	RIGHT EAR.					LEFT EAR.				
		Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.	Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.
1319 1320	Man, æt. 68.	—	—	The base of the stapes is not so moveable as natural.	—	The otoconiæ more abundant than natural; calcareous matter is mixed with it.	—	—	Stapes in the same state as the right ear.	—	In the same state as the right ear.
1321 1322	Man, æt. 67.	Distended by cerumen and epidermis.	It is so rigid that when the tensor tympani muscle is pulled, it scarcely moves.	Stapes attached to the fenestra ovalis more firmly than natural.	—	—	—	—	The stapes is in the same state as that of the right ear.	—	—
1323	Man, æt. 79.	—	Was perforated in two places.	—	—	—	—	—	—	—	—
1328 1329	Man, æt. 93.	—	—	The fibro-mucous membrane is so thick as to conceal the stapes.		—	—	—	Bands of membrane connect the ossicles to the promontory.		—
1330 1331	Man, æt. 80.	Distended by cerumen.	—	The base of the stapes is not so	—	—	Full of cerumen.	—	The base of the stapes is so firmly attached to the fenestra ovalis, that when the tensor tympani muscle		

				moveable as natural.					was pulled the stapes did not move; the other bones were not so moveable as natural. The base of the stapes is not ankylosed by bone.			
1334 1335	Man, æt. 65.	—	—	—	—	The upper osseous wall of the superior semi-circular canal is imperfect.		—	The base of the stapes is firmly ankylosed to the fenestra ovalis.		—	
1340 1341	Man, æt. 60.	—	—	Nearly full of a mass of solid white matter, which is composed of epithelial cells.	—	—	Distended by cerumen.	Atrophied; outer surface very concave; had been pressed upon by the cerumen; connected to the ossicles by membranous bands.	The base of the stapes is expanded and less moveable than natural; membranous bands connect the ossicles and the membrana tympani.	—	—	
1344	Man, æt. 55; left ear healthy.	—	Very concave externally; the inner surface is in contact with the promontory.	The base of the stapes is ankylosed to the fenestra ovalis.	—	—	—	—	—	—	—	
1347 1348	Man, æt. 92.	—	—	The base of the stapes is ankylosed to the fenestra ovalis.	—	The posterior wall of the posterior semicircular canal is imperfect.	—	—	The base of the stapes is not so moveable as natural.	—	The vestibule and cochlea contained a considerable quantity of black pigment.	
1358	Man, æt. 72; left ear healthy.	Distended by cerumen.	Lower half absent.	Fibro-mucous membrane very thick; malleus and incus attached to the promontory; neck of stapes disconnected from the incus and free.			—	—	—	—	—	

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No. of the Dissection.	Sex, Age, &c.	RIGHT EAR.					LEFT EAR.				
		Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.	Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.
1319 1320	Man, æt. 68.	—	—	The base of the stapes is not so moveable as natural.	—	The otoconie more abundant than natural; calcareous matter is mixed with it.	—	—	Stapes in the same state as the right ear.	—	In the same state as the right ear.
1321 1322	Man, æt. 67.	Distended by cerumen and epidermis.	It is so rigid that when the tensor tympani muscle is pulled, it scarcely moves.	Stapes attached to the fenestra ovalis more firmly than natural.	—	—	—	—	The stapes is in the same state as that of the right ear.	—	—
1323	Man, æt. 79.	—	Was perforated in two places.	—	—	—	—	—	—	—	—
1328 1329	Man, æt. 93.	—	—	The fibro-mucous membrane is so thick as to conceal the stapes.		—	—	—	Bands of membrane connect the ossicles to the promontory.		—
1330 1331	Man, æt. 80.	Distended by cerumen.	—	The base of the stapes is not so	—	—	Full of cerumen.	—	The base of the stapes is so firmly attached to the fenestra ovalis, that when the tensor tympani muscle		

				moveable as natural.					was pulled the stapes did not move; the other bones were not so moveable as natural. The base of the stapes is not ankylosed by bone.		
1334 1335	Man, æt. 65.	—	—	—	—	The upper osseous wall of the superior semi-circular canal is imperfect.		—	The base of the stapes is firmly ankylosed to the fenestra ovalis.		—
1340 1341	Man, æt. 60.	—	—	Nearly full of a mass of solid white matter, which is composed of epithelial cells.	—	—	Distended by cerumen.	Atrophied; outer surface very concave; had been pressed upon by the cerumen; connected to the ossicles by membranous bands.	The base of the stapes is expanded and less moveable than natural; membranous bands connect the ossicles and the membrana tympani.	—	—
1344	Man, æt. 55; left ear healthy.	—	Very concave externally; the inner surface is in contact with the promontory.	The base of the stapes is ankylosed to the fenestra ovalis.	—	—	—	—	—	—	—
1347 1348	Man, æt. 92.	—	—	The base of the stapes is ankylosed to the fenestra ovalis.	—	The posterior wall of the posterior semicircular canal is imperfect.	—	—	The base of the stapes is not so moveable as natural.	—	The vestibule and cochlea contained a considerable quantity of black pigment.
1358	Man, æt. 72; left ear healthy.	Distended by cerumen.	Lower half absent.	Fibro-mucous membrane very thick; malleus and incus attached to the promontory; neck of stapes disconnected from the incus and free.		†	—	—	—	—	—

No. of the Dissection.	Sex, Age, &c.	RIGHT EAR.					LEFT EAR.				
		Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.	Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.
1319 1320	Man, æt. 68.	—	—	The base of the stapes is not so moveable as natural.	—	Theotoconie more abundant than natural; calcareous matter is mixed with it.	—	—	Stapes in the same state as the right ear.	—	In the same state as the right ear.
1321 1322	Man, æt. 67.	Distended by cerumen and epidermis.	It is so rigid that when the tensor tympani muscle is pulled, it scarcely moves.	Stapes attached to the fenestra ovalis more firmly than natural.	—	—	—	—	The stapes is in the same state as that of the right ear.	—	—
1323	Man, æt. 79.	—	Was perforated in two places.	—	—	—	—	—	—	—	—
1328 1329	Man, æt. 93.	—	—	The fibro-mucous membrane is so thick as to conceal the stapes.		—	—	—	Bands of membrane connect the ossicles to the promontory.		—
1330 1331	Man, æt. 80.	Distended by cerumen.	—	The base of the stapes is not so	—	—	Full of cerumen.	—	The base of the stapes is so firmly attached to the fenestra ovalis, that when the tensor tympani muscle		

				moveable as natural.					was pulled the stapes did not move; the other bones were not so moveable as natural. The base of the stapes is not ankylosed by bone.		
1334 1335	Man, æt. 65.	—	—	—	—	The upper osseous wall of the superior semi-circular canal is imperfect.	—	—	The base of the stapes is firmly ankylosed to the fenestra ovalis.	—	—
1340 1341	Man, æt. 60.	—	—	Nearly full of a mass of solid white matter, which is composed of epithelial cells.	—	—	Distended by cerumen.	Atrophied; outer surface very concave; had been pressed upon by the cerumen; connected to the ossicles by membranous bands.	The base of the stapes is expanded and less moveable than natural; membranous bands connect the ossicles and the membrana tympani.	—	—
1344	Man, æt. 55; left ear healthy.	—	Very concave externally; the inner surface is in contact with the promontory.	The base of the stapes is ankylosed to the fenestra ovalis.	—	—	—	—	—	—	—
1347 1348	Man, æt. 92.	—	—	The base of the stapes is ankylosed to the fenestra ovalis.	—	The posterior wall of the posterior semicircular canal is imperfect.	—	—	The base of the stapes is not so moveable as natural.	—	The vestibule and cochlea contained a considerable quantity of black pigment.
1358	Man, æt. 72; left ear healthy.	Distended by cerumen.	Lower half absent.	Fibro-mucous membrane very thick; malleus and incus attached to the promontory; neck of stapes disconnected from the incus and free.		†	—	—	—	—	—

No. of the Dissection.	Sex, Age, &c.	RIGHT EAR.					LEFT EAR.				
		Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.	Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.
1363 1364	Man, æt. 64.	—	There is a circular orifice in the fibrous laminæ, three quarters of a line in diameter; it is situated between the malleus and posterior part of meatus; its outer surface is covered by epidermis.			†	—	It is in the same state as the right ear.	—	—	†
1371 1372	Man, æt. 64.	—	Epidermoid layer uneven; dermoid layer at posterior part destroyed by ulceration; radiate and circular fibrous layers also partially destroyed at this part; the mucous layer only remains.			—	—	Thicker than natural.	Fibro-mucous membrane thicker than natural.	—	—
1377 1378	Man. æt. 66.	—	—	Full of membranous bands of adhesion.	—	—	—	—	In the same state as the right ear.	—	—
1380	Man, æt. 73; right ear healthy.	—	—	—	—	—	—	Contained in its substance a yellow deposit.	—	—	—
1387	Man, æt. 59; right ear healthy.	—	—	—	—	—	There is a bulging of the lower osseous wall.	—	—	—	—

1390	Man, æt. 82; right ear healthy.	—	—	—	—	—	—	Wholly absent; apparently destroyed by ulceration.	Long process of malleus absent.	—	—
1393	Man, æt. 72; left ear healthy.	—	Very concave externally.	Bands of membrane connect the ossicles; the inferior extremity of malleus fractured.		—	—	—	—	—	—
1395 1396	Man, æt. 67.	—	—	The base of the stapes is not so moveable as natural.	—	—	—	—	In the same state as the right ear.	—	—
1397 1398	Man, æt. 71.	Distended with cerumen.	—	Ossicles connected together by membranous bands; the stapes is not so moveable as natural.		—	Distended by cerumen; the cavity is dilated.	—	The ossicles are connected together and to the promontory by membranous bands.	—	—
1399	Man, æt. 50; left ear healthy.	—	Absent, with the exception of a small semilunar portion at the upper part.	Membranous bands connect the malleus and stapes to the promontory; the mastoid cells are separated from the tympanum by a broad membranous band; the mastoid cells contain cholesterine; the lining membrane is very thick.		—	—	—	—	—	—

No. of the Dissection.	Sex, Age, &c.	RIGHT EAR.					LEFT EAR.				
		Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.	Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.
1404	Man, æt. 60; right ear healthy.	—	—	—	—	—	—	The anterior half is absent; the posterior half is calcareous.	—	—	†
1406	Man, æt. 74; right ear healthy.	—	—	—	—	—	—	—	Stapes fixed to the fenestra ovalis more firmly than natural.	—	—
1409 1410	Man, æt. 68.	—	—	Base of stapes less moveable than natural.	—	—	—	—	Base of stapes less moveable than natural.	—	—
1411 1412	Girl; died from fever.	—	—	Fibro-mucous membrane more thick and red than natural.		—	—	—	Fibro-mucous membrane more thick and red than natural.		—
1413 1414	Man, æt. 61.	—	—	Delicate membranous bands connect the ossicles.	—	—	—	—	Delicate membranous bands connect the ossicles.	—	—

1419 1420	Man, æt. 54.	—	—	Fibro-mucous membrane thicker than natural; membranous bands connect the ossicles; stapes not so moveable as natural.	—	—	—	In the same state as the right ear.	—	—
1421 1422	Man, æt. 60.	—	—	Stapes not so moveable as natural.	—	—	—	Stapes not so moveable as natural.	—	—
1430 1431	Man, æt. 60; left ear healthy.	—	Dull; very concave externally; atrophied, except at the anterior part, which is white and thick; connected to promontory by bands.		—	—	—	—	—	—
1432	Man, æt. 71; left ear healthy.	Excepting at the central part, which consists of epidermis only, it is thick and white, like cartilage.		Stapes ankylosed to the fenestra ovalis.	—	—	—	—	—	—
1434 1435	Man, æt. 68.	—	—	Base of the stapes somewhat expanded; and firmly attached to the fenestra ovalis.	—	—	—	Base of the stapes not so moveable as natural.	—	—
1442 1443	Man, æt. 71.	—	—	Stapes not so moveable as natural.	—	—	—	Stapes not so moveable as natural; lower osseous wall imperfect.	—	—

No. of the Dissection.	Sex, Age, &c.	RIGHT EAR.					LEFT EAR.				
		Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.	Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.
1445	Man, æt. 72; right ear healthy.	—	—	—	—	—	—	Not much thicker than natural; at the anterior part an orifice a line and a half long and three fourths of a line broad.		—	—
1446 1447	Man, æt. 69.	Inner surface red.	Blood-vessels distended.	Ossicles connected by membranous bands.	—	—	—	—	Base of stapes expanded; less moveable than natural.	—	The cochlea contains more pigment than natural.
1452	Man, æt. 66; left ear healthy.	—	Thicker than natural.	Ossicles connected by bands; stapes not so moveable as natural.		—	—	—	—	—	—
1456 1457	Man, æt. 71.	Contains pus.	Anterior part gone; posterior part fallen in and attached to the promontory; lower part of malleus absent.	Upper part full of thick soft membrane and dark pus; incus disconnected from stapes and nearer the mastoid cells than natural; stapes firmly fixed.		—	—	—	Contains a dark coloured fluid; stapes fixed.	—	—

1460 1461	Man, æt. 64.	—	Very concave externally; thick, white, like parchment.	Fibro-mucous membrane thick; contained a muco-serous fluid; ossicles connected by bands; mastoid cells hollowed out; contain mucus mixed with crystals of cholesterine.	The cochlea full of a dark coloured fluid blood effused around the auditory nerve.	—	—	In the same state as the right ear, in addition to which the stapes was ankylosed.	—	—
1465 1466	Man, æt. 68.	—	More rigid than natural.	Bands of membrane connect the ossicles; stapes fixed more firmly than natural.	—	—	More rigid than natural.	Bands of membrane connect the ossicles; stapes fixed more firmly than natural.		—
1468	Man, æt. 71; right ear healthy.	—	—	—	—	—	—	—	Stapes less moveable than natural.	—	—
1469 1470	Man, æt. 63.	—	—	Base of stapes ankylosed to the fenestra ovalis.	—	—	—	—	Base of stapes ankylosed to the fenestra ovalis.	—	—
1471 1472	Man, æt. 80.	—	—	Stapes less moveable than natural.	—	—	—	—	Stapes less moveable than natural.	—	—
1477 1478	—	—	Thicker than natural.	Ossicles connected together more firmly than natural; stapes partially fixed.	—	—	Thicker than natural.	Ossicles connected together more firmly than natural; stapes partially fixed.		—	
1483 1484	—	—	Radiate fibrous layer has been destroyed by ulceration.	—	—	—	Radiate fibrous layer has been destroyed by ulceration.	—	—	—	

No. of the Dissection.	Sex, Age, &c.	RIGHT EAR.					LEFT EAR.				
		Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.	Meatus Externus.	Membrana Tympani.	Cavitas Tympani.	Eustachian Tube.	Internal Ear.
1483*a* 1484*a*	—	—	Fibrous laminæ thicker than natural; opaque.	Bands of membrane connect the ossicles.	—	—	—	Fibrous laminæ thicker than natural; opaque.	Bands of membrane connect the ossicles.	—	—
1510 1511	Man, æt. 72.	—	Thicker than natural.	—	—	—	—	Thicker than natural.	—	—	—
1514 1515	Man, æt. 73.	—	—	Body of incus fixed so as to fix the stapes.	—	—	—	—	Body of incus fixed so as to fix the stapes.	—	—

TABLE V.

Tabular View of the Morbid Appearances found in 226 Diseased Ears, the histories being unknown.

MEATUS EXTERNUS.	Containing a collection of cerumen	12
	Containing a collection of cerumen and epidermis	1
	Containing a collection of cerumen and epidermis, the osseous walls being partly absorbed	3
	Containing a collection of cerumen, the osseous tube being dilated	2
	Containing a collection of cerumen, the osseous walls absorbed so as to expose the mastoid cells	1
	Containing a collection of cerumen, the osseous walls being absorbed in parts	3
	Containing a collection of hairs	1
	Containing a collection of cotton wool	1
	Contracted	1
	Having bulgings from the osseous walls so that the calibre of the tube is much diminished	14
	Osseous walls rough	1
	Osseous walls carious	1
	An orifice in the upper wall	3
	An orifice in the lower wall	1
	Depressions in the bony wall as if dead bone had been removed	2
	Membranous meatus so much atrophied as to leave the bone exposed	1
	Membranous meatus ulcerated, bone exposed	1
	Membranous meatus congested	3
	Molluscous tumour	1
	Molluscous tumour, the bony wall absorbed	1
	Molluscous tumour projecting through the bone into the mastoid cells	1
EUSTACHIAN TUBE.	Guttural portion red and soft	2
MEMBRANA TYMPANI.	Hazy	2
	Opaque	4
	Thick	14
	Tense	5
	Lax	2
	Vascular	1
	Very concave externally	8
	So concave externally that its inner surface is in contact with the promontory	2
	Very concave externally and connected to the promontory by membranous bands	6
	Very concave externally and adherent to the promontory	2
	Very concave and thick	1
	Very concave and tense	2
	Thick and opaque	5
	Concave, thick, and opaque	1
	Calcareous	2
	Having a cartilaginous spot	2
	Flat externally	4
	Thick, flat externally, and white	4
	Thick, and attached to incus by membranous bands	1
	Thick and vascular, and connected to promontory by bands of membrane	1

Membrana Tympani.	Thick and opaque, and attached to promontory by bands of membrane	4
	Thick, tense, and congested	2
	Perforated	8
	Perforated, the remnant being thick	2
	The upper part detached from the bone	2
	Absent, apparently from ulceration	4
	Epidermoid lamina thick	4
	Dermoid lamina thick	1
	Dermoid lamina thick and vascular	3
	Dermoid lamina detached from fibrous lamina	1
	Radiate fibrous lamina absent, in parts apparently destroyed by ulceration	3
	Fibrous laminæ thick	2
	Fibrous laminæ containing black pigment-cells	2
	Fibrous laminæ absent, apparently from ulceration	4
	Fibrous laminæ absent, mucous lamina only remaining, and attached to promontory	2
	Mucous lamina thick	2
	Perforation of all the laminæ excepting the epidermis	1
	Perforation of all the laminæ excepting the mucous lamina	2
Cavitas Tympani. — *Contents.*	A collection of mucus	11
	A collection of blood	1
	A collection of blood and mucus	1
	A collection of mucus and serum	3
	A collection of cholesterine and mucus	4
	A collection of epithelium, and distended by it	1
	A collection of pus	1
State of Mucous Membrane.	More vascular than natural	7
	Thicker than natural	13
	Vascular and thick	13
	So thick as to bury the stapes	3
	Vascular and thick, and contains mucus	2
	Blood effused beneath it	1
Bands of Adhesion.	Between the ossicles, the mucous membrane being healthy	22
	Between the stapes and promontory	2
	Between the stapes, malleus, and promontory	1
	Between the malleus, incus, and promontory	1
	Between the malleus and incus	1
	Between the malleus and promontory	1
	Between the malleus, membrana tympani, and promontory	1
	Between the malleus, membrana tympani, and incus	1
Ossicles.	Not so moveable as natural, the stapes not being fixed	4
	The handle of malleus fractured	1
	The handle of malleus disconnected from membrana tympani	1
	Malleus and incus ankylosed together	1
	Long process of malleus absent	1
	Incus disconnected from the stapes	5
	Incus, long process absent	1
	Incus fixed	2
	Stapes less moveable than natural	49
	Stapes, base expanded, and less moveable than natural	5
	Stapes, base projecting into vestibule and less moveable than natural	1
	Stapes ankylosed by bone to the fenestra ovalis	11
	Stapes atrophied	1

Cavitas Tympani.	*The Walls.*	Lower wall incomplete	3
		Canal for portio dura nerve incomplete	2
		Layer of bone between mastoid cells and lateral sinus incomplete	2
		Layer of bone between mastoid cells and cavity of cerebellum incomplete	1
		Canalis caroticus contracted	2
Internal Ear.		Exostosis from the upper wall of the meatus internus	2
		A tumour upon the auditory nerve in the meatus internus	1
		Upper part of osseous superior semicircular canal absent	2
		Posterior wall of posterior semicircular canal absent	1
		Exostosis in the vestibule around the fenestra ovalis	2
		Membranous labyrinth thicker than natural	1
		Endolymph opaque	1
		A membranous band dividing the membranous labyrinth	1
		Otoconie more abundant than natural	1
		Membrane of fenestra rotunda opaque and thick	2
		Lamina spiralis cochleæ thick	1
		Lamina spiralis cochleæ, black pigment-cells very abundant	3
		Cochlearis muscle? hypertrophied	1
		Fluid in cochlea red	1
		Distended by a dark-coloured fluid	2
		Blood being effused around the auditory nerve	2
		Black pigment in vestibule and cochlea more abundant than natural	1

Table VI.

Tabular View of the Morbid Appearances found in 1013 *Diseased Ears.*

Meatus Externus.	Containing a collection of cerumen	71
	Containing a collection of cerumen and epidermis	9
	Distended and dilated by a collection of cerumen	5
	Distended and dilated by a collection of cerumen and epidermis	1
	Containing a collection of cerumen and rye-seeds	2
	Containing a collection of cerumen; the osseous walls being absorbed in parts	3
	Containing a collection of cerumen and epidermis; the osseous walls being absorbed in parts	4
	Containing a collection of cerumen; the osseous walls being absorbed in parts so as to expose the cavity of the mastoid cells	1
	Containing a collection of hairs	1
	Containing a collection of cotton wool	1
	Containing a molluscous tumour	5
	Containing a molluscous tumour; the osseous walls being absorbed in parts	3
	Containing a molluscous tumour which projects through the bone into the cerebral cavity	1
	Containing a molluscous tumour which projects into the mastoid cells	1
	Containing a collection of pus	10
	Containing a collection of pus mixed with epidermis	1
	Having polypi growing from its walls	1
	Having polypi growing from its walls, the bone being carious	1
	The dermoid layer so much atrophied as to leave the bone denuded	2
	The dermoid layer hypertrophied	2
	The dermoid layer congested	7
	The dermoid layer soft	1
	The dermoid layer soft and red	2
	The dermoid layer soft and detached from the bone	2
	The dermoid layer soft and thick, the bone being carious	1
	The dermoid layer ulcerated, the bone being carious	1
	Osseous walls rough	1
	Osseous walls carious	7
	Osseous walls absorbed in parts	2
	Osseous walls presented an orifice superiorly	3
	Osseous walls presented an orifice inferiorly	1
	Osseous canal much contracted	3
	Having bony growths from the osseous walls; canal much contracted	14
Membrana Tympani.	Opaque	15
	Vascular	7
	Vascular and thick	3
	Relaxed	4
	Tense	10
	Tense and atrophied	2
	Inner surface connected to the promontory by bands of membrane	32
	Inner surface adherent to the incus	9
	Inner surface adherent to the stapes	4
	Inner surface adherent to the stapes by membranous bands	11
	Inner surface adherent to the incus	1

Membrana Tympani.

Inner surface adherent to all the ossicles	2
Inner surface adherent to all the ossicles and the promontory by bands	6
Outer surface more concave than natural	34
Outer surface more concave than natural, and thick	4
Outer surface more concave than natural, and opaque	2
Outer surface more concave than natural, and thick and opaque	1
Outer surface more concave than natural, and soft	1
Outer surface more concave than natural, and tense	2
Very concave externally, and the inner surface in contact with the promontory	10
Very concave externally, and the inner surface connected to the promontory by bands	13
Very concave externally, and the whole of the inner surface in contact with the inner wall of the tympanum; the tympanic cavity being obliterated	7
Very concave externally, and thick, and adherent to the promontory	3
Thicker than natural	66
Thick and unyielding	5
Thick and white	12
Thick and soft	2
Thick and tense	5
Thick, and attached to the incus by membranous bands	1
Thick and vascular, and connected to the incus by bands	1
Thick and opaque	4
Thick, tense, and congested	2
Containing deposits of calcareous matter	14
Containing spots of cartilage	2
Flat externally	6
Flat, thick, and white	4
Epidermoid lamina thick	8
Epidermoid lamina absent	5
Dermoid lamina very vascular	1
Dermoid lamina very thick	4
Dermoid lamina very thick and vascular	3
Dermoid lamina detached from the fibrous laminæ	1
Radiate fibrous lamina absent, entirely destroyed by ulceration	3
Radiate fibrous lamina absent in parts	2
Dermoid and fibrous laminæ absent in parts, apparently from ulceration	3
Radiate and circular fibrous laminæ destroyed by ulceration in parts	6
Radiate and circular fibrous laminæ entirely destroyed by ulceration	4
Radiate and circular fibrous laminæ entirely destroyed by ulceration; the mucous lamina being attached to the promontory	2
Radiate and circular fibrous laminæ containing pigment-cells	3
Mucous lamina thick	2
All the laminæ destroyed by ulceration except the epidermoid	3
All the laminæ destroyed by ulceration except the mucous	2
All the laminæ perforated	47
All the laminæ absent apparently from ulceration	21
All the laminæ perforated; the remaining portion of the membrane being adherent to the promontory	9
All the laminæ perforated and very thick	1
All the laminæ perforated, very thick and concave, and adherent internally to the promontory	2
All the laminæ perforated by molluscous tumours	2
Upper part of all the laminæ detached from the bone	2
The circular cartilage exposed	2

Cavitas Tympani.	*Contents.*	Mucus	65
		Blood	6
		Blood and mucus	1
		Blood, mucus, and lymph	1
		Serum	10
		Serum and mucus	3
		Serum and lymph	1
		Lymph	6
		Epithelium	2
		Epithelium and oil	1
		Scrofulous matter	20
		Calcareous matter	8
		Cerumen	1
		Cholesterine	1
		Cholesterine and mucus	5
		Cellular tissue	2
		Oily matter	1
		Pus	17
	State of the Mucous Membrane.	More vascular than natural	75
		Thicker than natural	211
		Thick and very vascular	16
		So thick as to conceal the stapes	27
		So thick as to fill the tympanic cavity	6
		Ulcerated	24
		Pulpy	5
		Containing black pigment-cells	2
		Having serum beneath it	1
	Membranous Bands between	Malleus and promontory	6
		Malleus, incus, and promontory	1
		Malleus and stapes	1
		Malleus, stapes, and promontory	6
		Incus and promontory	5
		Incus, stapes, and promontory	3
		Incus and malleus	1
		Stapes and promontory, the mucous membrane being healthy	79
		Stapes and promontory, the mucous membrane being thick	48
		Stapes and promontory, the mucous membrane being vascular	6
		Stapes, promontory, and pyramid	1
		All the ossicles	30
		All the ossicles and the promontory	9
		Tensor tympani muscle (the tendon) and the stapes	3
		Chorda tympani nerve, incus, stapes, and promontory	2
		Chorda tympani nerve and upper wall of tympanum	1
	Malleus.	Adherent to the promontory	1
		Absent, apparently from caries or ulceration	4
		Partly removed by caries	1
		Malleus and incus lying in the mastoid cells	1
		Fixed by ligamentous ankylosis to the upper wall of the tympanum	3
		Fixed by osseous ankylosis to the upper wall of the tympanum	2
		The body ankylosed to the incus	3
		The long process detached from the membrana tympani	3
		The long process fractured	1
		The long process in contact with the promontory	3
		The long process adherent to the incus	1
		The long process detached from the body	1
		The long process absent	2
		The long process carious	3
		The long process exostosed	1

Cavitas Tympani.	*Incus.*	Absent	4
		Long process absent	2
		Partly removed by caries	8
		Disconnected from stapes	14
		Disconnected from malleus	1
		Fixed by membranous ankylosis to the orifice of the mastoid cells	2
	Stapes.	The base ankylosed by bone to the fenestra ovalis	49
		The base ankylosed by bone to the fenestra ovalis, the base being expanded	6
		The base ankylosed by membrane to the margin of the fenestra ovalis	36
		The base ankylosed by membrane to the margin of the fenestra ovalis, the base being expanded	6
		The base ankylosed by membrane to the margin of the fenestra ovalis, an exostosis surrounding the fenestra	2
		The base of the stapes attached to the fenestra ovalis more rigidly than natural	66
		The base projecting into the cavity of the vestibule	5
		The base expanded and more fixed than natural	7
		The base expanded and projecting into the vestibule	2
		Detached from incus and attached to the membrana tympani	1
		Ankylosed to incus	2
		Detached from the fenestra ovalis and the incus	2
		Disconnected from the fenestra ovalis	1
		Partially absorbed	1
		Atrophied	1
		Absent, apparently from ulceration	2
	All the Ossicles	Less moveable than natural	4
		Absent, apparently from ulceration	2
		Disconnected from each other	1
		Carious	2
	Osseous Walls.	Thickened	1
		Carious	6
		Upper wall partly deficient	54
		Lower wall partly deficient	25
		Osseous lamina between mastoid cells and lateral sinus incomplete	2
		Osseous lamina between mastoid cells and cavitas cerebelli incomplete	1
		Canal for portio dura nerve incomplete	2
		Carotid canal contracted	7
Eustachian Tube.		Containing mucus	10
		Containing mucus, and the lining membrane congested	1
		Containing mucus, and the lining membrane thick	2
		Mucous membrane congested	5
		Mucous membrane of faucial portion red and soft	2
		The walls connected by bands of adhesion	3
		A stricture in the osseous part	1
		A stricture in the cartilaginous part	2
		Very large	2
	Tensor Tympani Muscle.	Atrophied	14
		Attached to stapes by a membranous band	1

Internal Ear.	*Auditory Nerve.*	Atrophied	5
		Atrophied and congested	2
		Vestibular portion atrophied	1
		In a state of suppuration	1
		Having a tumour attached to it	1
		Having blood effused around it	2
	Vestibule.	Membranous labyrinth thicker than natural	8
		Membranous labyrinth atrophied	20
		Membranous labyrinth congested	2
		Membranous labyrinth containing blood	1
		Membranous labyrinth containing pus	2
		Membranous labyrinth containing red serum	2
		Membranous labyrinth containing an opaque fluid	3
		Otoconie absent	3
		Otoconie more abundant than natural	8
		Endolymph deficient in quantity	10
		A membranous band dividing the vestibule	2
		An exostosis growing from its walls	3
		Black pigment-cells more abundant than natural	1
	Cochlea.	Blood-vessels distended	2
		Cochlearis muscle (Todd and Bowman) red	1
		Cochlearis muscle hypertrophied	4
		Black pigment very abundant	4
		Fluid opaque	2
		Fluid of a dark colour	2
		Fluid of a red colour	3
		Fluid deficient in quantity	8
		Lamina spiralis thick	1
		Containing pus	1
	Semicircular Canals.	Superior osseous wall of the superior semicircular canal incomplete	2
		Posterior osseous wall of the posterior semicircular canal incomplete	1
		Obstructed by otoconie	2
		Otoconie more abundant than natural	2
		Containing pus	1
		Containing calcareous matter	2
		Containing blood	1
		A carious orifice from the tympanum into the superior canal	1
	Membrana Fenestræ Rotundæ.	Thick	4
		Thick and tense	1
		Thick, tense, and opaque	2
		Red and pulpy	1
		Having bands of membrane covering its outer surface	4

OPERATION FOR

CONGENITAL CATARACT ON AN ADULT,

FOLLOWED BY

DIVISION OF THE RECTI MUSCLES FOR THE PURPOSE OF CONTROLLING THE OSCILLATION OF THE GLOBES.

BY

G. CRITCHETT,

SURGEON TO THE ROYAL LONDON OPHTHALMIC HOSPITAL.

Received May 23d.—Read Nov. 14th, 1854.

But few cases in which sight has resulted from an operation in an adult who has been blind from birth have been recorded: it is probable that but few have actually occurred; and we must expect to find this rarity increase as the treatment of congenital cataract during infancy approaches more nearly to certainty, and the inhabitants of remote, poor, and ill-informed localities are brought more within the reach of scientific surgeons. On this account every additional case may be thought to acquire increased value. We find also that each individual case of this kind possesses some peculiarities of practical utility and scientific interest. Nor must we forget the popular sympathy that is naturally enlisted in such a case. The restoration of sight, high as it must rank as a scientific result, sinks into comparative littleness when brought into competition with the introduction of a new and invaluable sense upon an adult mind, mature, more or less educated, and striving to realise, through the

imperfect and incapable media of sound and touch and language, ideas of the beauty and order and variety of our material universe. The poet, the novelist, and the dramatist have availed themselves of this idea, but have used a strange amount of poetic licence, and have widely departed from scientific truth in supposing the acquisition of sight to be suddenly and instantly complete. But we find quite enough in the plain, naked truth, and in a narrative of the facts of such a case as they actually occur, without borrowing from imagination or fiction, to gratify the inquiry of the scientific and the interest of the curious and the benevolent.

These considerations lead me to the conclusion that the case I am about to describe will, from its extreme rarity, its scientific interest, and its popular claims upon our attention, be thought worthy of being laid before your society.

Jane Smith, æt. 22, the daughter of a wheelwright, residing near Newbury, Berks, was first brought to me at the Ophthalmic Hospital in the spring of 1849. She was a tall, well-formed young woman, with a pleasing, intelligent, and cheerful appearance and manner. The forehead was large and rather well developed. There was slight internal strabismus of both eyes; considerable oscillation and involuntary rolling of the globes from side to side; the head was depressed, and the lids were usually kept nearly closed.

On examining the eyes, the corneæ were bright and normal; the anterior chambers were rather large; the irides were bright, and of a deep brown colour, rather thin, and stretched towards the pupil, which was very small, rather irregular, and filled with a flat, white substance, which had the appearance of being a dense piece of capsule of the lens; the pupillary margin of both irides were firmly adherent to these capsules, and were, in consequence, quite unacted upon by the stimulus of light or by belladonna. There was good perception of light, and under certain circumstances, when the light was very strong and thrown in a favorable way, a very bright colour could be distinguished from a dark one. It appears from the history that when about three years old

she was brought up to the Ophthalmic Hospital, and operated upon by Mr. Tyrrell once for congenital cataract, and that her mother, supposing nothing further was to be done, took her away into the country, and never re-applied at the hospital. As might be expected, no vision followed this operation. When nine years old, she was taken to Mr. Alexander, and was operated upon three times, with some benefit for about twelve months, and then relapsed into her former condition. When eleven years old, she was taken to Mr. Cleobury, of Oxford, and was again operated upon, with some temporary improvement. Nothing further was attempted until she was brought to me, about eleven years after, in the condition I have already endeavoured to describe.

The difficulties of the case with which I had to contend were the extreme firmness and toughness of the capsule, the strength of the adhesions between the iris and capsule, and the constant, irregular, oscillatory movement of the globes. I performed five needle operations through the cornea, at intervals of about two months. On each occasion I succeeded in partially detaching the tough capsule from the iris, so as to leave a small pupil; but this gradually contracted again, so as to prevent useful vision. In each operation the needle was introduced through the cornea, so as to disturb the eyes as little as possible. At length I succeeded in so far detaching the capsule in the left eye, as to leave a small, permanently clear pupil, though a portion of capsule could still be seen; in the left eye I was not so successful. Just at that time my attention was drawn to the very beautiful little canular forceps brought over to the Great Exhibition by Charrière and Luër, from Paris. I had already succeeded in partially detaching the capsule from the iris on one side, but not to such an extent as to leave any clear pupil. I therefore made a small opening, with a broad needle, through the sclerotic coat, about a line and a half behind the corneal junction. With the forceps I seized the capsule, and drew it outwards towards the opening; just at this point the piece broke away from the forceps, but

the capsule remained completely out of the sphere of vision, leaving a small oval pupil, slightly drawn outwards. I had now succeeded in getting a pupil in each eye. That in the left was small, but central, and about half the natural pupil was still filled up with a tough piece of white, opaque capsule; but as there was a perfectly clear space by the side of it, I thought it undesirable to interfere further with it. In the right eye the pupil was larger, of an oval shape laterally, and perfectly clear. Having succeeded so far, another rather serious difficulty remained. There was slight strabismus, and incessant and unconquerable rolling of the eyeballs from side to side to such an extent, as completely to prevent the fixing the eyes upon any object for a sufficiently long time to obtain a correct image or transmit an impression to the brain, and therefore, practically, she was nearly as badly off as ever. To remedy this serious evil, I first divided the internal rectus of the right eye, which was the one that appeared slightly inverted. This had the effect of entirely removing the inversion, and of very much controlling the oscillatory movement. Finding that in the left eye, though there was no strabismus, there was incessant movement, I was induced, some weeks after, to perform the same operation in that eye. My patient was now in a far better state for the use and education of her newly obtained sense; the eyes were straight and very much steadier. Still, after some months' trial, she again applied to me, complaining that before she could get an image clearly fixed in her mind, she felt her eyes involuntarily drawn outwards, and thus lost it. As this was a serious drawback to her education, I divided the external rectus in each eye; the result of which is that the globes are now nearly stationary, and the slight movement that remains is well under control. All that operative measures could secure had now been accomplished. The poor girl had two fine dark hazel eyes, with small, elear, central pupils; and the globes were quiet, central, worked together, and under fair control. Still, vision was imperfect, owing probably to the absence of lenses, the partial development

of the retina, and the entire want of education. I now procured lenses for her,—one four-inch, and another two-inch focus. The progress of the case had been so slow, and the recovery of such an amount of sight as was now enjoyed so gradual, that it was impossible to perform any of those very striking experiments that one or two cases that have been already put on record have exhibited; at the same time, I observed a few rather curious circumstances. It was remarkable to contrast the rapidity and accuracy of her sense of touch, which was highly educated, with the slow, laborious process by means of which she arrived at the shape and nature of an object through the medium of her newly acquired and imperfectly educated vision. I found that glasses assisted her very much in obtaining a clear outline of objects; but they gave her an impression that everything was much larger than her previous experience, through the medium of touch, had taught her that it really was. I found that she was never able to ascertain what an object really was by sight alone, though she could correctly describe its shape and colour; but that after she had once instructed the one sense through the medium of the other, and compared the impression conveyed by touch with sight, she was ever after able to recognise the object without touching it. In this respect her memory was very perfect; I never knew her fail in a single instance, and I put this power very frequently to the test of experiment. It was curious to place before her some very familiar object that she had never compared in this way, such as a pair of scissors. She would describe their shape, colour, glistening, metallic character, but would fail in ascertaining what they really were until she put a finger upon them, when in an instant she would name them, and laugh at her own stupidity, as she called it, at not having made them out before.

I made her describe objects that I was sure she had never had an opportunity of examining before, either by touch or sight, and this she did so accurately, as perfectly to prove, if proof be wanting, that she saw the object in its erect and natural position, and not inverted, as it appears upon the

retina; this experiment I several times repeated, and always with the same result, never, of course, allowing her to touch the object until she had described its shape to me. She was very near sighted, particularly for small objects, and seemed to be unable to form any idea of solidity—everything seemed flat to her. Her greatest difficulty was with the human face; although she could see and describe and name each feature, she seemed unable to take it in as a unity, and was unable to recognise a person except by voice or touch; and after two years of education she has not acquired this faculty. She can see the shape of large letters and figures with a two-inch lens, and she has learnt her letters; but residing in a small country place, where a schoolmaster is a scarce commodity, and surrounded by uneducated people, she has not had much help or encouragement in the prosecution of her studies. I saw her about a week ago; above two years have now elapsed since the last operation. I found she had made great progress in the rapidity and certainty with which she could recognise objects; she can see the hands upon a small watch, and distinguish small coin from each other, and which surface is presented to her. She can find her way about, distinguish her food, see to do household work and various kinds of needlework, and can distinguish the patterns of dresses and ribbons: in this last accomplishment she shows great aptitude, accuracy, and delight. Her own impression is that for a year she made considerable progress, but that recently her visual powers have not improved. The sight she enjoys is very valuable to her as compared with the blindness from which she previously suffered, but it must be admitted that it is inferior to the sight usually resulting from the operation for cataract. This is probably due to a combination of causes: 1st, the length of time that the retina was disused, being above twenty years; 2dly, the numerous operations that were performed at successive intervals, each, probably, attended with more or less inflammation; 3dly, the very imperfect state of the muscular apparatus, and the loss of focussing power; 4thly, the want of mental aptitude for

taking in and acquiring a combination of objects, the result of neglected education of these faculties, and the undue development of the sense of touch—the one sense being educated at the expense of the other.

This case, independently of the interest attached to it on account of its rarity and romance, seems to me to possess some few points of practical value. The first fact that suggests itself, and receives a powerful illustration from the history of this case, is the fact that the capsule of the lens, when once wounded, has a constant tendency to become firm and tough, which increases every year that it is allowed to remain, and also contracts a very firm attachment to the pupillary margin of the iris. This shows the great practical importance of watching closely a case that has been once operated upon, and taking care that a free and sufficient opening be made in the centre of the capsule during the gradual absorption of the lens. If this be neglected, great difficulty is experienced in getting an opening in the capsule, or removing it from the axis of vision; and every year increases the embarrassment of the case. Another circumstance to which I would briefly allude is the plan I adopted for removing the oscillatory state of the globes. I am not aware whether the division of the recti muscles has been suggested or adopted for this purpose before, but it certainly answered the purpose exceedingly well, and I should be disposed to adopt it in any similar case; the loss of power in moving the eye from side to side is attended with very little practical inconvenience, and the removal of involuntary movement is of great value in improving the visual power. The plan I adopted for the formation of a central pupil may fairly suggest a subject for discussion; it has the merit of having been safe and successful, and the demerit of tediousness. As a disciple of the late Mr. Tyrrell, I imbibed from him the idea of drilling in such cases, with a view of either penetrating through the capsule or separating it from the pupillary margin of the iris; in one eye I succeeded, and in the other I had effected a separation to such an extent as to enable me easily to draw

out the piece of capsule from the field of vision. It will probably occur to many present that the very simple and efficient method of using two needles, first suggested by my friend Mr. Bowman, would have been applicable to this case: an answer to this may be found in the fact that this plan had not been attempted at the time this case was under treatment; and even if it had, I am inclined to think that the pupil was so small, and the capsule so impenetrable, that two needles could not have been brought to bear efficiently upon the case. The use of Luër's small canular forceps was of great value in completing the case, but they would have been very unsafe until the capsule had been to some considerable extent separated from the iris. Any attempt to draw away the capsule at first would have probably damaged the iris, or separated it from its ciliary attachment; the case might, perhaps, have been hastened by the formation of an artificial pupil, but the result would have been less satisfactory, and perhaps not much more speedily accomplished. On the whole, after reviewing all the circumstances of this singular case, I am inclined to think that, even with every recent improvement, I could not have adopted any other plan that would have so safely and efficiently accomplished the object I had in view.

ON

INGUINAL TUMOUR

ASSOCIATED WITH

SYMPTOMS OF STRANGULATED HERNIA

AND ABSENCE OF

THE TESTICLE ON THE AFFECTED SIDE.

BY

HENRY THOMPSON, F.R.C.S., M.B.

Received Oct. 21st.—Read Nov. 14th, 1854.

It occasionally happens, but by no means frequently, that a case is presented to the notice of the surgeon which exhibits a series of phenomena, of which the following outline may be regarded as generally a typical description.

A man who has been more or less subject to the occurrence of some fulness or tumour in one of his groins, right or left, finds it, rather suddenly perhaps, increased in size, or, at all events, becoming extremely painful; and this, probably, immediately after making some physical exertion, often, but not necessarily, of a laborious character. Notwithstanding the rest which he is compelled to take, the original pain increases, he becomes sick, the bowels do not act, or but slightly, the tumour becomes tender or perhaps appreciably hotter than the surrounding parts, the belly is painful on pressure, or it may be more or less tumid, or even tympanitic.

On examining the patient, but one testicle is found in the

scrotum, and this on the side opposite to that on which the tumour exists. He states that this is, and always has been, his natural condition; and he may, perhaps, add that for many years, or for as long as he can recollect, he has, in the groin now affected, been subject to occasional enlargement, which has hitherto disappeared either on his lying down or on making pressure with his hand upon it; and it may also have been painful at times, relief having, however, been always afforded on the subsidence of the swelling.

Among the several circumstances which have been enumerated here, there is but one the existence of which would render it at all doubtful that the patient is suffering from a strangulated inguinal hernia. The history and symptoms, with that single exception, alike point unmistakeably to the presence of this lesion. But that very circumstance—viz., the absence of the testicle from the scrotum on the affected side—is one of extreme importance. I have seen it overlooked altogether, so exclusively has the attention of the surgeon been applied to the tumour, and the taxis and the bath have both been sedulously employed before the significant fact has been discovered. Nevertheless, it alone may account for every one of the phenomena described, on an hypothesis widely differing from that of intestinal obstruction. Where congenital retention of the testicle within the inguinal canal exists, the same physical exertions which give rise to hernia and strangulation of the intestine, may occasion bruising and inflammation of the gland within its narrow limits. Such a condition of it will, and does, produce tumour, pain, tenderness, tension of the abdominal parietes, and vomiting. These, if associated with a degree of constipation, a state of things by no means unlikely to be found coexisting with the general disturbance of the system occasioned by orchitis in this form, will produce a *tout ensemble* very closely simulating, or, indeed, identical with that of strangulated hernia.

I have recently had a case under my care at the Marylebone Infirmary, which appears to be a useful illustration of the importance of an accurate diagnosis in the perplexing

conditions described, and, perhaps, to contribute in some slight degree to the means of forming it, more especially as our surgical literature throws very little light upon the subject, and affords but very slender assistance to the practitioner who may seek it there when in need. On these grounds I have ventured to offer the subject for the consideration of the society, in the hope that the practice of those whose experience of hernia has been considerable may be elicited in relation to it.

J. M—, æt. 55, a stout and well-formed man, was admitted to the Marylebone Infirmary on Thursday, September 14th, 1854, at 11 p.m., with symptoms indicating the existence of strangulated hernia, and a tumour in the right groin. The resident-surgeon ordered him a bath, and employed the taxis for some time. His efforts being unsuccessful, he summoned me to the case at 5 a.m. on the following morning, when I saw the patient for the first time. I then learned that "for many years" he had been subject to a swelling in the right groin, which always disappeared when he lay on his side or made pressure on it with his hands. Sometimes it had existed for two hours at a time, never more, and then it was always painful. He had never worn a truss, but had contrived a bandage for it himself.

On Wednesday evening, the 13th, during a walk, he felt the tumour coming down in his groin; and on reaching home he attempted to relieve himself of it in the usual way, but unsuccessfully. Late in the evening, vomiting came on, and the pain in the part was severe; the bowels had been opened in the course of the day. Early on Thursday morning he took two aperient pills and a dose of castor oil of his own accord, and afterwards some salts and senna. The vomiting continuing, and no action of the bowels having taken place, he sent in the evening to the infirmary for medical aid, and was admitted about 11 o'clock at night.

His condition, when I saw him early in the morning, was as follows: He lay on his left side, moaning and rubbing his belly, where he complained of severe pain. Abdomen a little distended, tender on pressure. Frequent vomiting of

a brownish, but almost inodorous fluid. A tumour, about the size of a goose's egg, but somewhat flatter, exists in the right groin, altogether above Poupart's ligament, slightly unequal in consistence, but for the most part rather elastic, certainly not solid or firm; the sides and lower border are defined; apparently a little moveable; no impulse whatever on coughing; complains of much pain on handling it; no appreciable elevation of temperature in the tumour. Observing that the scrotum was empty on this side, I learned that he had never to his knowledge had more than one testicle. Countenance anxious. Pulse quick and weak. Tongue coated; thirsty. As many hours had not elapsed since the aperients were taken, I ordered an enema of castor oil and turpentine to be given immediately. Two hours after, no action having resulted, I decided on operating without delay. My friend, Mr. Erichsen, at my request, kindly gave me the benefit of his opinion, and concurred in the propriety of the step. Having exposed what was evidently a hernial sac, I thought it desirable to ascertain its contents, and found two loops of small intestine, of a dark chocolate colour, which turned upwards over the tendon of the external oblique, much as a femoral hernia is apt to do. Beneath them, at the lower angle of the opening, and just opposite to the external abdominal ring, lay an atrophied testicle and cord, the former being free and moveable, the latter adhering to the posterior aspect of the inguinal canal, at which point the sac or tunica vaginalis abruptly ceased. The whole of the passage was narrow, its sides were exceedingly tense, and required to be rather freely nicked before the gut could be set free. This was then examined and returned; the testicle was left lying in its place, and the wound closed in the usual manner. Immediately afterwards, and during the following day, the patient expressed himself as greatly relieved. He took liquid nourishment well; and a dose or two of opium, to prevent the undue action of the purgatives administered before the operation. On the third day his bowels acted copiously and naturally. Abdominal tenderness came on, however, and some delirium.

Next day the latter increased, and the patient became lethargic, and gradually sank on the fifth day after the operation.

Post-mortem, twelve hours after death.—Injection of intestinal and parietal peritoneum not extensive, with a few ounces of pus-like fluid in the cavity of the abdomen. The loop of the intestine, ilium, which had been contained in the hernial sac, is seen lying free across the lower part of the belly; it is dark reddish-brown in colour, the inflamed portion being limited by two narrow crescentic marks of sloughing tissue, evidently in the lines of the principal constriction at the neck of the loop; there was no perforation. The testicle occupied the position, already described, at the bottom of a pouch of peritoneum, which extended downwards as low as the external ring, but no lower, thus limiting the descent of the protruded intestine and causing it to be forced upwards in the manner described. There was no adhesion or connection of any kind between the testicle and the small intestine or omentum, as has sometimes, and perhaps not unfrequently, been observed with this form of congenital aberration in the descent of the gland, and which has been held, in some measure, to account for it.

In most of the cases with which the records of surgery furnish us, in which inguinal tumour with symptoms of strangulation has been accompanied by absence of the testicle, the latter has been distinguishable through the abdominal parietes with more or less ease, separated from, and generally situate below, the hernial protrusion. In such, of course, there is less ground for perplexity. But in some few others, as in the case now reported, it has not been possible to make out any distinction of this kind, and probably on account of the atrophied condition of the gland. Here, on the other hand, the diagnosis may be extremely difficult. Yet we shall search almost in vain for any remarks on this important point, much less for any detailed observations relating to it. Mr. Lawrence has collected several cases, more or less resembling this in their essential

particulars, from Scarpa, Richter, Haller, Cloquet, Pott, and others; the parts from two of which, now forming preparations in St. Bartholomew's Museum, very clearly exhibit the peculiarity.[1] Sir A. Cooper appears not to have met with one himself, at the time when his great work was published. He collected and detailed there, four or five examples, and remarks: "When a hernia thus inclosed with the testicle in the inguinal canal becomes the subject of strangulation, very nice examination is required to detail the exact nature of the swelling."[2] Chelius simply refers to the occasional occurrence of the complication.[3] Samuel Cooper, in the 'Dictionary,' barely alludes to the fact.[4] Aston Key, in his memoir, gives one case almost exactly corresponding with that here related.[5] Bransby Cooper says: "I have myself met with considerable difficulty, whilst operating in a case of congenital bubonocele, from mistaking a non-descended testicle for a hernial sac."[6] In the works of Percival Pott and Langenbeck, both of whom paid special attention to the congenital form of hernia, we meet with no recognition and with no solution of the difficulty. In Guthrie's lectures on hernia; in the systematic surgical treatises of Liston, Fergusson, and other modern authors, no notice is taken of it; and not any one among the authors mentioned enters upon the question of diagnosis in relation to the treatment of acute symptoms. Velpeau remarks that a "retained testicle is sometimes embarrassing to the operator;" and elsewhere says—"I would make the same remark of the epiploon and *testicle*, or strangulation of the cord, of adipose tumours, and inflammation of the sac; so that in inguinal hernia, as in any other, an insurmountable constipation with stercoral vomitings positively indicate a strangulation or obstruction of the intestine."[7] Few, how-

[1] Lawrence, pp. 272, 567—571. The preparations referred to are in Series XVII, Nos. 1, 2.

[2] A. Cooper, p. 66.

[3] Chelius, South's trans., vol. ii, p. 62.

[4] S. Cooper, 'Dict.,' p. 720.

[5] 'A Memoir,' &c., p. 25.

[6] 'Lectures on Surgery,' p. 492.

[7] Vol. iii, pp. 672 and 79, Mott's ed.

ever, will now, I think, deny that it is extremely desirable to form a diagnosis, and to act promptly upon it too, some time before the appearance of stercoral vomiting has announced the lesion and its dangerous character. Mr. Erichsen, in his recent work on surgery, calls attention to the fact that an undescended testicle may become inflamed in the groin, and that "the difficulty of the diagnosis from strangulated hernia may be very considerable." He points out "the absence of the organ from the scrotum on the affected side, the peculiar sickening pain occasioned by pressure upon the tumour, the absence of gurgling, and of all possibility of reduction," as the facts from which the presence of the testicle may be inferred.[1]

The points, in the case already related, which appeared to be diagnostic, and which determined me to operate, with the conviction that the tumour was unquestionably a strangulated hernia, may be stated as follow:

First, as regards the history, little could be elicited tending to establish the nature of the swelling to which the patient had been subject. He had, however, never been led to suppose, from the peculiar character of the pain he had occasionally felt on its appearance, that it might be due to the presence of the testicle. So far, this was in favour of the supposition that it was intestine.

Secondly; the general symptoms were strongly corroborative of this view. Vomiting, although not yet feculent, had existed almost uninterruptedly during thirty of the thirty-six hours which had elapsed since the appearance of the swelling. Constipation, in spite of active purgatives, had persisted about a similar period. At the same time a small and quick pulse, and a degree of anxiety, in addition to severe abdominal pain, indicated serious interference with some important function. Inflammation of the testicle within the inguinal canal, I have myself seen accompanied with febrile disturbance, and also with vomiting, but

[1] 'Science and Art of Surgery,' p. 763.

transient in its duration compared with the stomach's action in this case.

Thirdly; the evidence afforded by a local examination appeared to favour the view that the tumour contained protruded intestine. When handled it was more elastic and compressible than the swelling which is presented by a testicle during an attack of acute inflammation, at all events, when occupying its natural situation. There was a marked absence of that sensation of resistance, solidity, and weight, which is experienced in manipulating the organ in the circumstances named. Again, there was no perceptible elevation of temperature in it, as compared with the surrounding parts, a condition the contrary of that which obtains in orchitis. There was a slight degree of general distension and tympanitis of the abdomen, which could not be readily explained in the last-named condition.

Lastly; the subjective symptoms appeared to be of less diagnostic value. Some stress has been laid on the importance of learning the kind of sensation experienced by a patient on firmly pressing a doubtful tumour of this kind, and of ascertaining whether it is identical with that peculiar pain which such treatment always produces in the testicle. A patient who is the subject of severe suffering, rarely, perhaps, describes his sensations with sufficient perspicuity at the time to afford trustworthy data in such a matter. Nothing, at all events, could be thus obtained in this case which was worthy of reliance. The whole abdomen was more or less painful, and both it and the tumour were notably tender on pressure. Besides this, there was desire to go to stool, and a self consciousness that ability to pass a motion would afford relief, a condition which seems generally to have been found associated with acute obstruction of the intestines.

The various conditions, local and general, which have been thus enumerated, taken in connection with absence of the gland from the scrotum on the affected side, are, I think, sufficient to establish pretty clearly the nature of a tumour presenting in the manner described. There remains one

important practical inference to be drawn from what we know of the nature of the constriction which is exerted upon the intestine in these cases. In several of those similar examples already alluded to, the stricture was found to be unusually tight, and the strangulation correspondingly severe. In this instance, although not more than thirty-six hours elapsed between the implication of the bowel and the operation, it has been seen that the viscus was unable to recover its vitality in the line of constriction. May we not conclude that, in this class of cases especially, no delay, beyond that which is actually necessary for the purpose of making a diagnosis and fairly applying the taxis, should take place before the patient is submitted to the influence of chloroform, and if this be ineffectual, to the application of the knife? *There should be no temporising with the tumour in the hope that it may prove not to be intestinal.* If the symptoms are such as to admit only of a vague and obscure interpretation, an exploratory incision should be made in order to solve the doubt, and that without loss of time, because irreparable injury may be so speedily sustained if a portion of intestine be really involved. In other words, if a doubtful or imperfect diagnosis of the nature of the tumour itself result from a careful and intelligent examination, we should the more promptly decide on the resort to operative measures, and not be tempted to seek or wait for the evolution of fresh symptoms; since, supposing strangulated hernia not to be present, the exploratory incisions are unattended with danger, while the postponement of the operation is almost certain to be fatal if that lesion, masked by some unintelligible complication, do really exist.

ON THE

JUVANTIA AND LÆDENTIA

IN

DIABETES.

BY

JOHN M. CAMPLIN, F.L.S., &c.

COMMUNICATED BY

RICHARD BRIGHT, M.D., F.R.S.

Received Nov. 10th, 1854.—Read Jan. 9th, 1855.

Several eminent professional friends having done me the honour, from time to time, to make inquiries of me on points connected with the complaint under which I formerly laboured, I am induced to relate my case, in the hope that it may afford some hints which may be useful to the profession at large.

In November, 1844, (then in my fifty-fifth year,) I was prostrated by an attack of diabetes. The symptoms were well marked, and need not be detailed; the professional friends consulted did not expect that I should rally; and one of them went so far as to say, when asked to prescribe for me a particular remedy, that it would only be "smoothing my passage to the grave," and yet here I am, with urine varying from 1·016 to 1·020, instead of 1·040 and upwards, and although ten years older, seldom or never flinching from any professional duty.

There being no doubt as to the nature of my complaint, an altered diet was immediately advised, and a run to the Isle of Wight; the latter I could take for a few days only, and that in the commencement of a cold, dreary winter, yet it assisted materially in arresting my downhill course, and time was gained for the effect of remedies and diet.

All my advisers (and I had several whose kindness can never be repaid) recommended meat, fish, and eggs, with the cruciferæ; they differed, however, in minor points; one advised coffee, another tea; one wine, another brandy, &c. As a substitute for bread, cakes or biscuits made of washed flour and lard were at first recommended; these soon quite disagreed. The gluten bread was next tried; this latter, unpleasant as it was, I took as long as it could be borne; but after a year or two, it became insupportable, and when passing a few days at Brighton, I availed myself of the advantages of change of air, and Sussex bread, to cast it aside, and have never resumed it. On returning to town, I did pretty well for a time, eating the ordinary bread very sparingly, but afterwards I relapsed, and was almost in despair. Having before this seen Dr. Prout occasionally, and now telling him of my dilemma, he suggested a kind of bran cake, which was immediately prepared according to his directions: it was by no means a pleasant composition, but that was not the worst, for the bran acted powerfully on the bowels, and it could not be continued in that form. We have all heard that "necessity is the mother of invention," and I immediately set a mill-maker to work to make me a mill which should grind the bran into a very fine powder; this means, and careful sifting, overcame the difficulty, and enabled me to succeed in the preparation of a kind of cake which was continued for some years, and with the best effects.[1]

[1] *Formula for Bran Cakes.*—Take a sufficient quantity (say a quart) of wheat bran, boil it in two successive waters for a quarter of an hour, each time straining it through a sieve, then wash it well with cold water (on the sieve), until the water runs off perfectly clear; squeeze the bran in a cloth as dry as you can, then spread it thinly on a dish, and place it in a

I had before this been more rigid in my diet than directed by the doctor, who, to use his own expression, "tolerated things which he did not advise." My protracted sufferings, however, now determined me to put away everything saccharine or amylaceous to the utmost possible extent, and I therefore gave up wine, at the same time that the bran cake enabled me to discard entirely the use of bread. I now soon became decidedly convalescent, and have never had my diabetic symptoms return with violence. The cold of November still produces unpleasant feelings, and some anxiety, but has not for two or three years rendered necessary even a partial return to the bran cake; and for six or seven winters past, I have not required the double clothing, and the hot bottle in the carriage, which were sometimes indispensable. There can be no question as to this bran cake having greatly prolonged my life, as I was fast becoming a decrepid valetudinarian before its use, and

slow oven; if put in at night let it remain until the morning, when, if perfectly dry and crisp, it will be fit for grinding. The bran thus prepared must be ground in a fine mill and sifted through a wire sieve of such fineness as to require the use of a brush to pass it through; if grinding once is not sufficient, it must be ground again until quite soft and fine. Take of this bran powder 3 oz., two new-laid eggs, 1 oz. ($1\frac{1}{2}$ or 2 oz. if desired) of butter, and rather more than half a pint of milk, mix the eggs with a little of the milk, and warm the butter with the other portion; then stir the whole well together, adding a little nutmeg and ginger, or any other agreeable spice. Bake in small tins (pattipans), which must be well buttered, in a rather quick oven for about half an hour. The cakes, when baked, should be as thick or a little thicker than a captain's biscuit; they may be eaten with meat or cheese for breakfast, dinner, and supper; at tea they require rather a free allowance of butter, or may be eaten with *curds* or any of the soft cheeses.

This formula is the same in substance, but improved in detail, as that given to Dr. Pereira some years since, and which he published in a foot-note in the last edition of his 'Materia Medica.' I also furnished him with the name of my mill-maker, Mr. White, 266, High Holborn, and Mr. White informs me that he has made several mills in consequence; and I take this opportunity to express my hope that those who have used the bran cake, from having seen Dr. Pereira's account of it, will do me the favour to inform me by letter as to the result of their experience.

should, in all probability, have altogether broken down long since; and I am the more anxious to dwell on this part of my history, from the conviction that if the bran cake, or some modification of it, were made on a larger scale, it might be used in our hospitals, and patients might be supplied with it after their discharge, thus obviating one of the difficulties as to their diet, after temporary recovery.[1]

At the present time I feel well, so far as the diabetes is concerned,[2] yet am of opinion that it would be no difficult matter to bring on a return; and believe that there are few who recover so perfectly as to be able to use the indiscriminate diet of former days. I am indeed acquainted with some who go so far as to take potatoes, and even sugar and fruit; but they do this very sparingly, whilst others have fallen speedy victims to imprudence in this respect; and I would never recommend any one to make the experiment without great caution.[3] In my own person, the specific gravity has increased from 1·025 to 1·037, from taking a glass or two of fruity port wine, without any other assignable cause; and rice puddings, persisted in for a short time, would formerly produce the same effect. I say formerly, with regard to rice, for during the late epidemic, I suffered rather severely from choleraic diarrhœa, and scarcely know what would have been my fate, if restricted to my old diet of meat, greens, and bran cake: as it was, rice and

[1] I am quite aware that the use of bran is not a new idea; on the contrary, one of my earliest medical advisers mentioned it, but he had such an opinion of its unmanageableness as entirely discouraged me at the time from making a trial, and by his advice I took the gluten bread; my preparation has the advantages of being by no means disagreeable, does not disorder the bowels, and contains very little starch; some of the bran powder (not prepared for analysis), was put into the hands of Dr. Marcet, a short time since, who found it to contain only 2·52 per cent.

[2] Dr. Babington examined a specimen of my urine a short time since, the sp. gr. was 1·018, and he found no trace of sugar.

[3] No experiment on diet should be made in the winter, particularly if the north-east wind prevail.

macaroni many days together, (without any fresh vegetables), produced no alteration of urine, though a sweet taste after meals sometimes reminded me of former days.

To return to the early history of my case.

Fat meat and eggs were more especially directed for me, and were taken without any immediate ill effects, but I am of opinion that they produced great biliary derangement, more especially the eggs, the free use of which has been laid aside long since.

Fish is a most important article of diet for the diabetic, but does not require particular notice, as its use only requires the ordinary cautions for those in moderate health.

I have never found it necessary to disallow the use of milk, the sugar contained in it certainly does not pass into glucose readily, or under ordinary circumstances; and this induces me to notice, that, as to farinaceous substances, their disposition to pass into sugar is not to be estimated simply by their proportions of gluten and starch, and it does not seem to me that anything but experiment, will determine the degree in which they do this. Some kinds of bread injure more than others; and in my own person brown bread has often produced greater sweetness in the saliva than that made of fine flour; and it is my opinion that unfermented flour in the various forms in which we use it, is less liable to pass into sugar than bread. I have not, however, had opportunity to test this on a sufficiently large scale to be certain of the fact. Genoa macaroni I believe to be one of the best substitutes for the bran cake; the finest macaroni not only contains more gluten than ordinary bread, but the long boiling in water which it ought to undergo before being prepared for the table, further diminishes the proportion of starch.

With regard to vegetables, I have almost confined myself to the cruciferæ, as they can be obtained in London during the greater part of the year; the young cabbage, is, perhaps, at once the cheapest and best for ordinary use. Cauliflowers, broccoli, Brussels sprouts, &c., give considerable variety. Seakail is excellent, but rather too expensive; the late Dr.

Pereira recommended sour krout to me; but having fresh vegetables at hand I have never tried it. Since my recovery, I have taken French and scarlet beans, without injury; but should consider the cruciferæ highly preferable for the actually diabetic. Spinach is generally considered allowable, and indeed recommended, and those who reside in the country, might add to the list other plants of the same natural order, such as the Chenopodium bonus Henricus, and the younger leaves of the common bect, both of which I have tasted, and found them very agreeable. My friend, Mr. Ward, in conversation with him on the subject, suggested that the leaves of the Beta Cicla and Maritima may be used as pot-herbs; and perhaps the list might be still further enlarged.[1]

As to tea or coffee, I have no hesitation in giving the opinion that, in a majority of cases, tea is to be preferred. Milk may be taken with it freely; cream sparingly.

As a beverage at meals, water or toast-water may be used, and, instead of wine or malt liquor, a small quantity of brandy and water, not above a table-spoonful of the former. Wine is better excluded, except claret, which is too expensive for common use. There are several other wines which may be allowable as being free from sugar, but of them I have no experience. The pale French brandy is, no doubt, the best; but I have tried the English eau de vie made in imitation of it, and found it to answer very well, and Dr. Bence Jones informs me that he has sometimes directed rum, which, being without sugar, is, *quoad hoc*, as eligible as brandy. Sponging with tepid water, followed by friction, has been so beneficial, in more than one case in which I have been consulted, as to call forth the highest encomiums. For myself, I have only practised sponging with cold salt and

[1] Another of the cruciferæ, the watercress, will help to make the breakfast agreeable, and I see no objection to other vegetable products, such as celery, endive, mushrooms, &c., when in season, if the stomach will bear them, provided we avoid starch, sugar, and the vegetable acids.

water in the summer, and an occasional warm bath in the winter: these I have used with great advantage.[1]

Warm clothing,—a leather waistcoat, and gutta percha soles to the boots, in winter, are very important. It would be superfluous to descant on the advantages of change of air and occupation; but I may mention that, whilst at home, I constantly used the bran cake; if I left town for a time, and took the prepared bran with me, I seldom used it beyond two or three days, and never felt the worse for taking the liberty of substituting bread under the influence of change of air and scene. When I returned home I continued the bread, until warned by a partial recurrence of symptoms to have recourse to my bran cake. This took place several times before I was able altogether to discontinue its use.

It is not my intention, in the present paper, to go into details as to the *medical* treatment of diabetes. Nevertheless, I am unwilling to conclude without making some allusion to it, or entirely to omit noticing the effects of medicine on myself.

In the first place, I know of no specific remedy for the disease; and notwithstanding the successful issue of my own case, and that I have witnessed other cases which have recovered and stood their ground several years, I fear that there are many which will prove fatal, in spite of any means to which we can have recourse. Where the disease attacks the thin and delicate, with a disposition to tubercular or some other form of disease, in which the constitution breaks down, although change of air and appropriate remedies may check the disease, and sometimes enable us to overcome it, we shall often fail. In fact, we must expect this to be the case where we cannot remove the causes, whether original, or the result of the circumstances in which the individual is placed. On the other hand, where the complaint is

[1] I think it is important that the bathing should be followed by friction, and, if plain water is used, hair gloves should be employed, or some similar means of encouraging a sustained action on the skin.

simply a form of mal-assimilation, without serious organic mischief, and the case is one in which we can diminish or control the exciting causes, and the patient will submit to regimen, we may fairly hope for the best results. As a type of the latter, I may mention the case of a clergyman, who consulted me a few months since, a stout, large man, who had taken a free, mixed diet, and been, according to his own statement, "a great bread eater." His urine was upwards of 1·040, and the quantity considerable, and he is not sound on other points, besides being diabetic; yet he has no lung affection, and I believe the action of the kidneys to be merely eliminative, and that he may be restored to good general health, by treating his case as you would a modified form of dyspepsia, viz., denying those articles of diet which promote the disordered action, and at the same time invigorating the stomach and nervous system; and, in fact, two letters I have received from him detail his progressive improvement. As a case of the former class, that of a thin, delicate, young lady, highly nervous and excitable, whose sister had died of a similar disease, and who had lately suffered from intense mental anxiety, may be referred to. She had consulted one of our most eminent physicians some time before I saw her, who had enjoined a meat diet, ammonia, &c., which had been most strictly adhered to. In spite of these, the disease continued to gain ground, and when I became her regular attendant, two or three weeks before death, the whole system was in a state of the highest excitement, the pulse above 120, there was great emaciation, intense thirst, and almost constant sickness. The symptoms were, in a degree, tranquilised by effervescents and opiates; but as the stomach never regained its power to take nourishment, although she was allowed almost a *carte blanche* as to aliments, she sank rapidly. In this case, no remedy could have availed much. There was the constitutional disposition, and a source of anxiety and mental suffering which could not be removed.[1] It is scarcely necessary to observe, that there are

[1] In this case the urine, which had been a long time in very large

many cases not of so decided a character as either of the above, and in which the circumstances of constitution, occupation, &c. are so variously modified and combined, that each becomes more or less a separate study.

Instead of there being a specific for this disease, the cases of recovery which I have witnessed have occurred under the use of various remedies, and the same case has been greatly benefited by a change from time to time, keeping in view the great principles of building up the system, promoting the action of the skin, regulating the action of the liver, &c., and searching into, and as much as possible, removing the causes of the disease.

If I were to speak of one medicine more than others, it would be the citrate of ammonia in the effervescent form, generally combined with the citrate of iron. Bitters and alkalies did me great service at one period of my attack. Opiates are useful in some cases, where the quantity of urine passed is very great, to give a temporary check; beyond that, I think them objectionable. Cod-liver oil has been used in some of the cases with whose history I have been acquainted, but without any very satisfactory results. I am of opinion, however, that there are cases in which its use is indicated, and purpose, when I have one which seems suited, to give it a further trial, probably in conjunction with Vin. Ferri or Infus. Quassiæ.

I have already mentioned ammonia in the form of citrate. As to the sesquicarbonate, I cannot speak favorably of its effects in my own case. A kind medical friend, who saw me often in an early stage, recommended a steady perseverance in its use, and I continued it, in gradually

quantity, and containing only sugar as an abnormal ingredient, became albuminous towards the last, and increasingly so as the fatal termination approached. A specimen examined a few days before death contained sugar, albumen, torulæ, and a few casts, and the sp. gr. had fallen so low that, if I recollect right, the last examined was only 1·014, and was as albuminous as in ordinary cases of albuminuria; the kidneys were found large, flabby, and congested, but with no decided marks of disease or degeneration.

increased doses, a considerable time, but without any decided advantage. When, at length, the stomach could no longer bear it, he advised ammonia in the form of benzoate. This was too much for me, being perfectly nauseous, and after a few doses, I bade adieu to ammonia, except, in combination with Infus. Cascarillæ or camphor mixture, as an occasional remedy. In this way I found it very useful, and for some years carried about with me a small draught, of which I took an occasional sip. This and all other medicines I have left off long since, unless it can be considered as medicine, that I sometimes chew a little broken cascarilla bark, or quassia, when kept beyond the usual time for meals, or in any way the worse for wear.

So much, then, for the facts of my case, and the observations I have been able to make on those of others, and I feel afraid to venture beyond this. If disposed to enter into discussion on the disease itself, I should class it amongst the neuroses, believing that exhaustion of nervous power, or some deranged state of nervous system, exists in all cases; yet I cannot but think that diet is also concerned in many. Still less am I disposed to undervalue the effects of regimen, and the other non-naturals, as they used to be termed, in its treatment.

In my own case, two causes had long been at work: the wear and tear of a laborious profession, and a diet in which fruits, rice, &c. had too large a share; and the disease, which had no doubt been creeping on unobserved for some time, was brought to its acme by eating freely of apples, which the unnatural thirst rendered peculiarly grateful, and at the same time undergoing unusual fatigue, and this too in the month of November. During one night passed in watching a somewhat anxious case, the urine became very great in quantity, as well as abnormal in appearance, and the nature of the complaint was too obvious. My pallid cheeks and sunken countenance, then and for a long time afterwards, will not soon be forgotten by myself or my friends.

Although, previously to the observations of Dr. Prout, the kidneys had been too much considered in this disease,

and remedies accordingly directed to restrain their excessive action, without sufficient reference to other symptoms, I think that we must not consider them wholly faultless, particularly when the disease has lasted some time. Indeed, a chain of morbid actions is set up in the various organs:—the bladder is irritated by unhealthy urine; an emptied bladder excites the kidneys to increased action; thirst is encouraged, the digestion is further impaired, and all the symptoms are aggravated by each other.

I must, however, check myself in these remarks, as not wishing to enter into the discussion of questions which may admit of any difference of opinion, but simply to relate the facts of my own case, and the results of actual experience.

June 25th, 1855.—Some time has now elapsed since my narrative was drawn up, during which I have again experienced the salutary effects of the bran cake. I went on well, notwithstanding a pretty free use of food containing starch, until November last, when the cold winds set in, and my old symptoms gradually returned. When they had attained considerable severity, they were partially checked by additional warm clothing, and restriction to a very small quantity of brown bread; at length this failed, and on the 5th of March, the specific gravity of the morning urine being 1·041, that of the afternoon 1·035, the quantity very considerable, with dry mouth, and tenderness in the back, particularly over the right kidney, it began to be time to take some decisive step; and I resumed the bran cake. The effect was immediate. On the 8th, the morning urine was scarcely 1·020, the afternoon, 1·015, the quantity normal; and although taking no bread, and less meat, I was already beginning to regain flesh;[1] that the change was owing to the substitution of the cake for the brown bread was sufficiently obvious, as the

[1] I have often remarked the rapidity with which this has taken place; it has been much more striking than its opposite.

weather continued cold, with a prevalence of north-east winds, and I had still considerable remains of catarrh.

Since the weather has become mild, I have been able to resume amylaceous food partially, and without injury; and, in fact, consider myself well.[1] The cessation of the diabetic symptoms was followed by congestion in the head, which harassed me several days, but gradually subsided under the use of citrate of ammonia, and small doses of Vin. Colchici; the uneasiness in the back left me at once, as well as several sensations difficult to be described. I have not yet ventured to return to the use of bread, but continue the bran cake at breakfast and supper; at dinner, two or three times a week, after meat, or fish, and greens, I allow myself puddings of flour or maccaroni; and at tea, small cakes made with flour, &c.[2]

Thus, in brief, I have given the sequel of my history to the present time. I believe that the relapse would not have occurred in a more genial season; the use of the cake in checking the symptoms until the weather has become more favorable, has been most important and striking.

[1] In addition to my own observation (with both the potash and copper tests), I may mention that my friend Dr. Bence Jones kindly examined a specimen the other day, (June 19th), the sp. gr. was 1·020 and he found no trace of sugar.

[2] I prefer these cakes to any form of biscuit, having found them to agree much better; they are prepared as follows:—

Rub 1½ or 2 oz. of butter into half a pound of flour, add a teaspoonful of powdered ginger, mix with milk and the *white* of one egg, (the white answers every purpose), roll out into a very thin paste, and cut them into round cakes with the top of the flower dredge; bake quickly, but not too much, about ten minutes will suffice.

ON A

PLASTIC OPERATION

FOR

THE RESTORATION OF THE LOWER LIP.

BY

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COMMUNICATED BY

WILLIAM BOWMAN, F.R.S.

Received Nov. 30th.—Read Dec. 12th, 1854.

Of the evils resulting from the contraction of scars, few are more serious, either in the distress or the disfigurement they occasion, than the eversion and dragging downwards of the lower lip following burns of the neck. The features are thereby hideously deformed, and the power of retaining the saliva is lost.

For the relief of this deformity I have adopted the mode of operating, which it is my object in this paper to describe. Before doing so, I will, however, make a few observations on some plastic operations which have been performed for the relief of scars of the neck by the division of the bands of cicatrix, and the transplantation of a neighbouring portion of sound skin to fill up the chasm.

In 1839, Mr. Carden,[1] of Worcester, operated upon a girl,

[1] 'Transactions of Provincial Medical and Surgical Association,' vol. xii.

aged fourteen years, who was greatly deformed by a burn, which occurred seven years before. The movements of the head were much restricted; the mouth was permanently open; the tongue protruded; the lower incisors projected horizontally, and there was constant dribbling of saliva. A transverse incision was made throughout the entire extent of cicatrix in front of the neck. The chin was then drawn upwards, and every tense band connected with the cicatrix was divided until the head was relaxed nearly into its natural position. A flap of skin, three inches long and two and a half inches wide, was detached on each side from over the clavicle and chest. These were raised and united in front of the throat. The degree of improvement effected in this case, and tested by the lapse of four years, was highly gratifying.

Subsequently to the performance of Mr. Carden's operation, a similar proceeding was adopted in several cases, with great success, by Dr. Mütter,[1] of Philadelphia.

I have performed this operation in six cases since August, 1848, and have witnessed it in some others by my colleagues at the Leeds Infirmary.

In all these cases, observed by myself, there was a marked and most satisfactory improvement in the movements of the head and neck. In one case, besides the advantage just noticed, the displacement of the lip was relieved, and the patient was enabled to retain her saliva. In all the cases the displacement of the lip was in a greater or less degree mitigated by the operation on the neck, but in several this particular deformity remained to such an extent as to render a special operation for the restoration of the lower lip necessary.

In these autoplastic operations on the neck it is of essential importance, as stated by Dr. Mütter, that the incision of the scar should extend from *sound* skin on one side of it to *sound* skin on the other, and that every band of adventitious fibrous tissue beneath the scar should be

[1] 'British and Foreign Medical Review,' April, 1845.

divided until the bottom of the wound discloses a loose healthy cellular tissue.

The flap to be transplanted may be taken from any neighbouring portion of the neck, shoulder, or thorax, where healthy skin can be obtained. In one case, from lack of sufficient sound skin, I was under the necessity of including a portion of cicatrized skin in the flap.

The very accurate adaptation of the flap by suture should be avoided, as great tension renders the flap liable to slough. It is, therefore, better to be content with attaching the flap at its extremity and one of its borders, and to leave the other border free. Much may be done afterwards by careful dressing, during the healing process, in rectifying any separation of the parts.

As far as I have observed, the transplanted flap never unites to the edges of the wound by the "first intention." All that is accomplished in the first instance is an organic union of the cellular surface of the flap to the parts beneath. The more close approximation of the edges of skin is obtained during the processes of granulation and healing.

When the bands of scar are so numerous or extensive as to require more flaps of skin than one to be inserted, it is better to repeat the operation at separate times. I saw much constitutional disturbance in one case from the operation having been conducted on too large a scale in the first instance.

After the lapse of some months the transplanted portion of skin is sometimes found to have yielded to a process of stretching, so as to exceed considerably its original dimensions.

The special operation for the restoration of the lower lip, which I have now to describe, consists in the formation of two lateral flaps from the everted lip and neigbouring portions of the cheeks, and in uniting them in the median line above the central portion of the base of the everted lip; or, in other words, in building up a new lip upon the base of the old one.

The operation will be rendered more intelligible by reference to the accompanying diagrams.

Two vertical incisions, about three quarters of an inch in extent, are made through the everted lip down to the bone, leaving between them the central portion of the lip of an extent equal to half the distance from one angle of the mouth to the other. From the lower end of each of these incisions, the knife is carried in a curving direction outwards and upwards, so as to terminate about one inch from the angle of the mouth, opposite to the second molar tooth of the upper jaw. The two flaps thus marked out are then detached from their connections with the bone, the mucous membrane uniting them to the alveoli being freely divided. Lastly, a bare surface is made along the upper border of the central portion of the

A A A**, the everted lower lip; *A*, middle portion of ditto. *B A** and *A* B*, the two lateral flaps formed from the everted lower lip and cheek on each side.

A, middle portion of everted lip. *B A** and *A* B*, the two lateral flaps united by suture in the median line to each other, and below to the middle portion of the everted lip.

everted lip, by a transverse line of incision, near the junction of the lip with the alveoli. The incisions being thus completed, the lateral flaps are united by twisted sutures, and two or three interrupted sutures, to each other on the median line, and to the central portion of the lip below.

Case I.—In January, 1850, I performed this operation, with the most satisfactory result, on Emma Spencer, of Bawtry, æt. 9. In 1849 she had undergone two operations on the neck by transplantation of skin, and had thereby obtained great relief in the movement of the head and neck. The eversion of the lip, however, although a little diminished, continued to distress her much. The teeth had an horizontal direction, and the saliva could not be retained. In this condition, in January, 1850, the operation for restoration of the lower lip was performed; she was afterwards enabled to retain the saliva, and her appearance was remarkably improved. In 1853 the exposed portion of the lower lip, now forming the chin, had become pale in colour, and nearly resembled in appearance the common skin.

Case II.—In January, 1853, Jonathan Hirst, of Crowle, in Lincolnshire, æt. 13, was admitted into the Leeds Infirmary. He was severely burnt several years before about the neck. The head was dragged down towards the sternum, and its movements were greatly impaired; the lower lip was completely everted and bound down to the chin; the lower incisors had a horizontal tendency; and the cheeks and eyelids were drawn downwards.

A large band of scar, situated in front and on the right side of the neck, was divided, and numerous bands of adventitious fibrous structure were destroyed, so as to expose the healthy adipose and cellular tissue beneath. In the vacuity thus produced a flap of skin was placed, taken from the chest immediately below the left clavicle. By this operation the movements of the head and neck were restored to a tolerable degree of perfection, and the eversion of the lip was a little but not much mitigated.

June 16th, 1854, I operated on the lip in the manner described above; the healing of the incisions proceeded rapidly, and he left the hospital on the 7th of July, able to retain the saliva, and with his features greatly improved.

CASE III.—Sarah Kay, æt. 13, having been much disfigured by burns on the neck, underwent, in April, 1851, the operation of transplantation of skin after division of a large band of cicatrix in the neck. The movements of the head and neck were restored by this operation nearly to their natural state, but the lip remained much everted and bound down to the chin, the lower incisor teeth had a horizontal tendency, and the saliva could not be retained.

July 21st, 1854, the operation for restoration of the lip was performed.

August 22d, the wounds were healed, and the patient left the hospital, able to retain the saliva, and having a pleasing expression of countenance.

ON

DISLOCATION OF THE FEMUR,

UPWARDS AND FORWARDS,

BENEATH THE CRURAL ARCH.

BY

W. CADGE, F.R.C.S., NORWICH.

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To acquire a knowledge of the entire clinical history and result of individual cases of chronic disease or injury is always difficult and often impossible. From the long duration of their symptoms, or their imperfect recovery, they singly admit of, at most, only a very partial observation; still, when the disease is wide-spread, and examples of it are of common occurrence, this piecemeal observation, though gleaned by many hands and variously recorded, affords, in the end, a tolerably accurate knowledge of the whole course of the malady.

But when, on the other hand, the case is one of bodily injury, of rare occurrence, and though leading, perhaps, to much inconvenience and deformity, does not compromise either life or health, the partial observation too often remains unconfirmed, and the clinical history imperfect.

It is with the view of supplying, in one instance, the last and most important link in such a chain of evidence, that I now submit to the Society a short account of the appear-

ances, living and post-mortem, of an unusual form of dislocation of the femur.

The case will be found very accurately and succinctly described in the twentieth volume of the Society's 'Transactions,' by Mr. Travers, jun., and it is by way of appendix to that paper that these observations are now made.

The history of the case is shortly this:

Edward Micklam was a sailor, æt. 35 at the time of his death. Sixteen years before that event he fell from the rigging of his ship into the hold, striking and injuring his hip in the fall; after the accident he was unable to rise or move the limb, was carried to his hammock, where he laid for about seven or eight weeks, and then began to use the limb a little. There was no medical man on board, and therefore no surgical treatment was afforded him.

Four months after the accident, Micklam arrived in London and became an in-patient of the Westminster Hospital. It was then discovered that he had sustained a dislocation of the thigh-bone at the hip-joint upwards and forwards, and two or three attempts were made to replace the bone, but without success. He left the hospital and subsequently became, at various times, a patient of several of the most eminent surgeons of London, and, amongst others, of the late Sir A. Cooper, who has mentioned the case in his great work[1] on fractures and dislocations, as an instance of dislocation on the pubes. No further attempts were made to replace the bone, and though the limb was much shorter than its fellow, the patient could move it in every direction a little, and he managed, with the aid of a stick, to walk very well.

Some years after the injury Micklam fell down a flight of stairs and fractured the dislocated femur obliquely, close below the trochanters; union took place with very little increase of deformity, and he recovered the former limited use of the leg. Having led a very reckless and dissolute life, he died a few years ago of phthisis, while under the care

[1] Fifth Edition, page 95.

of my friend Mr. Taylor, of Ebury Street, who kindly allowed me to remove and preserve the bones.

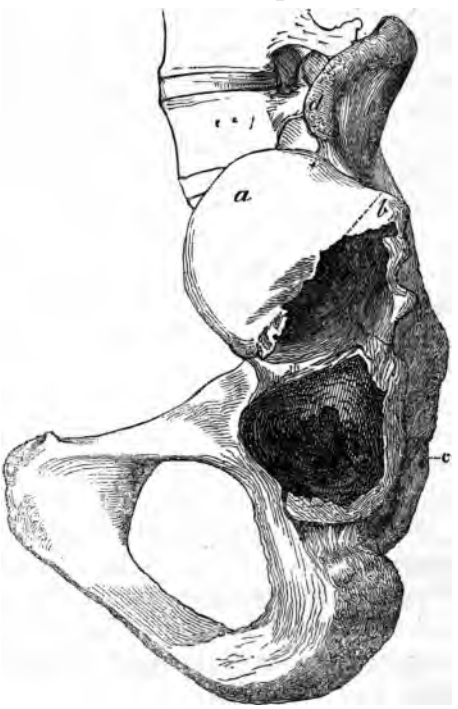
Appearance of the Body before Dissection.—1. The left leg was fully an inch and a half shorter than the right.

2. The toes were turned outwards, and while the body lay on its back the foot rested completely on the outer border.

3. A large globular bony tumour was seen and felt in the groin close to the superior spine of the ileum.

4. The left buttock was flattened, and the trochanter major was an inch nearer the spine of the ileum than on the sound side.

Dissection.—The head of the femur occupied the interval between the anterior superior and inferior spinous processes of the ileum. The edge of the latter was hollowed out, and new bone deposited in such abundance that it formed a new and complete acetabulum, so complete as to hold the thigh bone suspended after all the soft parts were removed, and make it requisite to saw off a large piece of the new bone in order to set the femur at liberty; indeed it is scarcely possible to witness in



a, new acetabulum; *b*, piece sawn off to liberate head of femur; *c*, old acetabulum; *d*, anterior superior spinous process of ileum.

greater perfection the efforts made by nature for the repair of injury.

The new cavity, thin in its walls and smooth on its outside, was lined by a dense pearly white tissue, which resembled very closely fibro-cartilage, both in its gross appearance and in its minute structure.

The head and neck of the femur were unchanged in form; the former was less even and smooth than usual, but still covered with cartilage.

The ligamentum teres had been torn from its cotyloid attachment at the time of the accident, and its remains were found lying in a deep groove at the bottom of the new acetabulum, one end being firmly fixed to the fossa on the head of the femur.

The edge of the new cavity was connected with the neck of the thigh bone by a thick capsular ligament. The old acetabulum was obliterated, partly by the absorption of its cotyloid margin, by a deposit of new bone, and partly, also, by a mass of dense fibrous tissue.

The rectus muscle, which had been torn from its origin at the time when the injury was sustained, had procured a fresh attachment to the edge of the new cavity. The sartorius was stretched obliquely over the tumour, and the anterior crural nerve curved round its inner side. The gluteus maximus was much wasted, and the gluteus minimus was put rather on the stretch.

It will be at once observed that this case cannot be strictly placed under any one of the four classified forms of dislocation of the thigh as given by Sir A. Cooper.

Of the general correctness of this classification, no surgeon, I apprehend, can doubt; still, as time wears on and experience multiplies, cases come to be recorded in which the head of the bone has assumed some other than one of the recognised positions: in short, it admits of displacement in almost every direction.

This instance approaches most nearly to the dislocation on the pubes; but it would be a paradox to class it as such, for

the head of the bone is not placed on the pubes at all, but on the ileum. Looking at the matter in another and more practical point of view—namely, with reference to symptoms and treatment—the two forms are identical; pathologically they differ; symptomatically they are the same. The specimen I exhibit is not the only one of the kind that exists. In the Museum of Guy's Hospital there is a preparation in which the head of the bone is similarly situated, but the thigh in this instance is inclined more forwards, and the trochanter major has got a bearing on the ileum close above the acetabulum.

A case occurred to Dr. Cummins, and is related by Sir A. Cooper,[1] in which the head of the femur was felt, and seen close to the superior spine of the ileum. There was here shortening of the limb, and eversion of the foot. The reduction of the dislocation was effected on the eleventh day after the injury.

The late Mr. Morgan has also related a case[2] in which the luxated head of the bone was felt under Poupart's ligament, just inside the superior iliac spinous process. The toes were turned outwards, and the limb was shortened. The bone was returned to its natural position without much difficulty.

Lastly, Mr. Wormald[3] dissected a body at St. Bartholomew's Hospital, and found the head of the femur resting on the ileum, between the acetabulum and the anterior inferior spinous process. The leg was slightly shortened, and the toes were everted.

Here, then, are a few particulars of five cases differing slightly from each other, but all possessing in common three unequivocal and diagnostic signs; viz., more or less shortening of the limb, eversion of the toes, and the presence of the

[1] Vide work on Fractures and Dislocations, fifth edition, p. 101.

[2] Vide 'Guy's Hospital Reports,' vol. i.

[3] Vide 'Medical Gazette,' vol. xix, p. 657.

globular head of the femur in the groin. Moreover, the treatment and mode of reduction are nearly the same for all.

In consequence of these points of agreement in the several examples of the displacement, and with the view to rob the subject of some of its complexity, I would, with all submission, propose to substitute for the specific term "dislocation on the pubes," some other; such as "dislocation upwards and forwards," or "dislocation beneath the crural arch;" either of which would comprehend all the varieties characterised by the three diagnostic symptoms I have mentioned; no matter whether the head of the femur be lodged on the ileum (as in the five cases I have described), or on the pubes external to the femoral vessels (its usual position), or on the pubes internal to the vessels, as in a case described by the late Mr. Bransby Cooper.

In conclusion, one practical question suggests itself; viz., was it commendable practice to attempt reduction of the dislocated bone after the lapse of more than four months from the receipt of injury? The majority of surgeons, I suppose, agree in thinking that Sir A. Cooper's limit of eight weeks is too restricted for many cases; and that a rule of practice, based upon the lapse of time merely, cannot be invariably applicable. Dupuytren succeeded in reducing a dislocated hip on the ninety-ninth day; and I may mention that I have myself assisted to reduce dislocations of some of the smaller joints—the thumb and finger, for example—when nearly five months had elapsed, and with perfect restoration of the use of the parts in both instances.

In Dupuytren's case, it should be remarked that the patient was a female, twenty-five years of age, of slender make, and weak health, and that she remained in bed with the limb at rest and in splints, during the interval; whereas in the case before us, the patient was a robust lad, sixteen years of age; he remained in bed only seven or eight

weeks, and then began to use the limb. In the former, the period of growth had passed over, and the reparative powers of nature were probably almost in abeyance, while in the latter, the very reverse in both these particulars obtained.

ON

BONY ANKYLOSIS

BETWEEN

THE HUMERUS AND SCAPULA,

AFTER DISEASE.

BY

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Received Jan. 23rd.—Read Jan. 23rd, 1855.

I SHOULD not have ventured to occupy the attention of the society by the description of a single anatomical specimen, were it not for its extreme rarity: I have searched for a precisely similar preparation in vain through the Museum of the Royal College of Surgeons of England, and the collections attached to most of the metropolitan schools of medicine; and I have been equally unsuccessful in my enquiries among personal friends. But, remembering that not many years ago, the occurrence of osseous ankylosis after disease between the bones composing the ankle-joint, was almost denied by a high surgical authority, and that subsequent investigation has disproved that statement, I take the liberty of directing attention to the specimen now before you, in the hope that it may procure for me further information, and perhaps show that this termination of inflammatory morbid changes, so important as regards the great question of resection of the head of the humerus, is less rare than would

at first appear, and may, moreover, be favoured by appropriate means of treatment.

In the Museum of St. Bartholomew's Hospital, the only preparation at all analogous is described as "*a scapula and humerus united by bone: the upper part of the shaft is fixed by an irregular growth of bone to the remains of the glenoid cavity, and the base of the coracoid process. The spine and the inferior costa of the scapula are thickened,*" (Series II, Sub. B. 50) but the head of the humerus has disappeared by ulceration.

However, by referring to the descriptions of the museums in other countries, I find notice of two apparently parallel preparations, the one in the Musée Dupuytren, No. 656, the other in the Richmond Hospital Museum, in Dublin. The former is described "complete bony fusion of the humerus with the scapula, the form of the joint being normal." Upon the section, it is seen that the spongy substance of the humerus is continuous with that of the scapula.

The latter is mentioned in the 'Dublin Journal of Medical Science,' vol. xxi, 1842, p. 295, by Mr. R. W. Smith, to whom too high praise cannot be given for his investigations in the pathology of joints. The preparation is described, "ankylosis by fusion, taken from the body of a man, ninety years of age, and for many years before his death bedridden. The arm was rotated inwards; the glenoid cavity and the head of the humerus formed one continuous bone. The greater tuberosity was ankylosed by bone to the acromion, and the lesser tuberosity to the coracoid process. All the surrounding muscles had undergone fatty degeneration."

The specimen now before the Society came from the dissecting room of St. Bartholomew's Hospital, having been taken from the body of a man, aged 30, who used to obtain his living by performing as a juggler and tumbler in the public streets. He was dexterous in throwing up and catching a succession of balls, knives, or coins: in short, he performed the tricks usually exhibited by that class of persons.

When my attention was first directed to the body, I thought, from the healthy aspect of the skin, and the flattening of the shoulder from atrophy of the deltoid, that it might prove a case of non-reduced dislocation; but closer examination showed, first, that there was no projection of the acromion, and, secondly, that the scapula followed the movements of the humerus, as if the two bones constituted a single piece.

The muscles surrounding the joint were pale and atrophied, the supra and infra-spinetus, the teres minor, and the subscapularis muscles had contracted a closer adhesion than natural to the fibrous capsule of the joint, which was entire, but thickened, and small. The long tendon of the biceps was in great part destroyed, in shreds, and adherent; but there were none of the osteophytes, so commonly seen in such cases. The humerus and scapula, both somewhat smaller than natural, are completely fused by bony anchylosis. The sawn surface shows that, but for a line indicating the junction of the epiphysis with the shaft, the general cancellous texture of the former would be continuous with that of the latter. As it is, no line of demarcation exists between the glenoid cavity and the altered head of the bone. A small cavity, capable of holding a pea, seen in the detached fragment of the specimen, was filled by a substance, thicker, more yellow, and opaque, than the oily fluid permeating the rest of the bone; I believe this to have been the seat of a small abscess, which, having formed, ceased to extend, and the contents gradually acquired a consistence, which has not uncommonly led to the mistake of their being considered tuberculous. It appears to me that, first, the head of the bone has been changed in form by ulceration; and that, secondly, the disease having come to an end, osseous union has taken place by both fusion of the opposed granulating surfaces of humerus and scapula, and by a limited deposit of new bony matter.

There was scarce a trace of synovial membrane even in the interior of the capsule. The articular cartilages were entirely removed; and it is difficult to imagine how this

could have occurred by that process commonly known as ulceration of cartilage, by which large flakes are separated from inflamed and roughened bone. It must rather have been that slower process, commencing from the free surface and characterised by the splitting of the cartilage into fibres, and by its progressive absorption. The extremity of the acromion process, detached from the rest of the scapula, was reduced in size, and blended with the coraco-acromial ligament, which was stretched tightly over the head of the humerus. If we examine the relation of the humerus to the scapula, it will be seen to be dislocated upwards, a change of position by no means uncommon during the course of rheumatic disease, and at one time incorrectly regarded as the result of accident.

We may, I think, conclude, without much fear of contradiction, that the disease preceding the changes here exhibited, was that known and described under the head of rheumatic inflammation. It is not easy to say in what tissue it commenced; for we find that the synovial membrane is affected sometimes primarily, sometimes secondarily, the inflammation being propagated from the neighbouring periosteum. The morbid changes in the soft parts may proceed, *pari passu*, with others going on in the cancellous structure in the bone, or those in the bone may take precedence of all. One fact, however, is obvious; namely, that there are two varieties of this disease; one illustrated by the preparation, which I have had the honour now to present, in which the morbid changes seem limited to the surface of the bone; the other, illustrated by the specimen to which I have referred, in the pathological museum of St. Bartholomew's Hospital, where an exudation takes place generally through the cancellous texture of the whole head, and sometimes also of the shaft of the humerus, producing expansion of its walls, suppurations within its tissue, or in the synovial cavity, with ulceration of both cartilage and osseous tissue. The latter is far more serious than the former, but both are susceptible of cure.

I do not think that when, in the consideration of a grave

case of diseased shoulder-joint, the question of resection of the head of the humerus is raised, sufficient attention is paid to the possibility of a spontaneous termination of the disease, and the repair of the injured parts by osseous ankylosis. I have rather been accustomed to hear such a result doubted, or altogether ignored; and the patient has been informed that an operation was the only means of restoring him to health, and the possession of even a moderately useful limb. "Can such disease," observes M. Crocq, "indicate a serious operation? Yes. When the humerus is denuded to a great extent. When proper means have effected no amelioration, and especially when suppuration threatens to exhaust the patient. The operation should always be that of resection, which is known to be often crowned with success, and to give to the patient a useful limb. New bone is often formed if the member be kept sufficiently long at rest; and even if this does not take place the parts may be steadied by a proper apparatus." ('Traité des Tumeurs Blanches,' p. 655.)

It is far from my intention to underrate the operation of resection; I value it as a part of conservative surgery. I have seen the diseased head of the humerus extirpated sometimes with brilliant success, at other times with a less gratifying result; but the operation is always grave, and attended by both suffering and risk; and I think, therefore, that it is not quite out of place to bring forward proofs that under favorable circumstances (and we may in time better learn what they are), the disease may pass through its stages, and, even the joint, undergo a process of permanent repair, leaving the limb so free of movement and so useful in all its functions, that the patient may resume with success some of the most active and laborious employments of life.

ON THE RELATIONS OF

THE MORTALITY FROM CHOLERA

IN

LONDON,

TO THE

GENERAL MORTALITY AND TEMPERATURE.

BY

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The following communication has been prepared with a view to prove that there are certain meteorological conditions related to cholera which have not hitherto been noticed; and which, although they do not suffice to account for the outbreak of that scourge, give information which may assist us in our investigations as to its nature and origin. It is limited to a consideration of the two epidemics in London of 1849 and 1854; and since the former has already received much attention at the hands of the most competent authorities, it will be alluded to here only as offering points of comparison and contrast with those of the more recent one of 1854. For the more ready apprehension of the statistical details, two diagrams have been prepared, which exhibit the various relationships on the most cursory examination.

From Diagram No. 1 the following facts may be gained in reference to the cholera epidemic of 1854, considered in relation to the general mortality, and the various questions relating to temperature in that year. The weekly number of cholera deaths in the attack of 1849 are also inserted by way of comparison.

Thus, the *general mortality* was above the average at the beginning and the ending of the year 1854, as well as throughout nearly its whole course. This was especially evident in the spring quarter and the part of the summer quarter which preceded the great development of the epidemic; and it is not a little remarkable that, whilst in the 25th week it suddenly rose up to the extent of 140 cases, in the 26th week it suddenly fell nearly 300 cases, and so reduced continued during the three weeks which ushered in the great attack. It has also varied the experience obtained from epidemics in general, in that it did not, after the cessation of the cholera, subside below the line of the average mortality, but on the contrary, with the exception of three weeks, viz., the 49th, 50th, and 51st, it was considerably above the average, and at the end of the year the excess was no less than 228 cases. The extremes of the year were 984 and 3413 cases in the week.

In reference to *temperature*, it is evident that the attack of cholera occurs at the period of the highest temperature (60° to 65°), and after the temperature has been regularly and progressively increasing from the spring months. The temperature remains at or near to the highest point until about a week before the epidemic has attained its acme, when it declines more rapidly than it ascended, and is reduced to an average of between 45° and 50° before the mortality returns to its ordinary standard. The winter months of the year 1854 had, for the most part, a temperature higher than the average, whilst, on the contrary, the spring months were colder than the average. During the latter half of the year the temperature corresponded very much with the average standard, the most marked exception being the week immediately preceding the acme of the attack,

when it rose nearly 4° above the average, and although it sunk nearly 7° on the following week, it yet remained slightly above the average. Thus at the season of the year when cholera prevails, the winds are hot, the ground dry, and the beds of rivers and stagnant waters exposed by the constant evaporation.

The *daily variations*, or the daily extremes of temperature, are not only great but inconstant in our climate. During the winter half of the year they are clearly less than during the summer half, and are the lowest in the last and the first few weeks of the year, and then seldom exceed 10°. The greatest variation in 1854 was very evident in the first three weeks of the spring quarter (26°) and the greater part of the summer quarter, and was the greatest (31°) in the 36th week, or that of the acme of the cholera attack in both 1849 and 1854. In the first and last quarters of the year the variation was not only at or approaching to the minimum, but the increase or decrease proceeded with some approach to regularity and constancy. The great inconstancy which marked the two middle quarters is well exhibited by the diagram.

The next question in relation to temperature, is that of the difference between the temperature of the air and the dew-point; and this has its importance as being indicative of the relative amount of moisture existing in the atmosphere. The higher the dew-point the less is the difference between that temperature and that of the air, and the greater is the amount of humidity. This question is, therefore, determinable either by representing the two lines of temperature, of the air and of the dew-point, and marking their varying differences, or by using a single line, which shall indicate the difference between them. The latter is the more simple, and has been used in the construction of the diagram; and in proportion as it ascends, so does the degree of humidity diminish. It will be observed that the line exhibits great and sudden variations, and that they in general correspond with the line of *daily variation* of temperature. The greatest

differences are noticed in the spring and summer months, being 8° in the former, and 12° in the latter, and the week (28th) when the line began to suddenly ascend, was that in which the cholera of 1854 commenced its great development. Throughout nearly the whole period of the prevalence, this line ran high, and began to decline in the week when the deaths from cholera were the most numerous. In the autumn months the great degree of humidity is indicated by the low line referred to, and its constancy by the regular course which the line pursues. The lowest point, or that of the greatest humidity of the air, is at the commencement of the year; and so rapidly did it rise in that season, in 1854, that in the 9th week it was nearly as high as at any other period of the year, thus indicating at that period a very great degree of dryness.

In order to obtain an average for the estimation of the true value of the line of 1854, I have used the returns of 1847, 1848, 1849, 1851, 1852, and 1853, and the diagram will show a remarkable want of uniformity between it and the line of 1854. Thus, according to this average, the greatest dryness runs through the greater part of the spring and summer quarters, having its maximum (10°) in the 27th week, and increasing and decreasing with considerable regularity though about 3°. It is, however, evident, that dryness of the air prevailed, on the average, for many weeks before the season of the great outbreak of cholera.

It is worthy of note that after the dryness had almost attained its maximum in the 14th, 15th, and 16th weeks of 1854 (9°), it suddenly fell, and continued at a much lower point (5°) through all the succeeding weeks, until the 28th week, when the attack of cholera developed itself. Thus, although cholera is accompanied by the driest state of atmosphere known in this climate, it was, in 1854, preceded for many weeks by an uniform low range of humidity, so low as about 5° below the average. The meteorological conditions which precede an attack of cholera must have great importance in the estimation of those who

believe in the existence of a cholera poison, since in such anterior conditions the poison may be presumed to have been originated and developed. As this view is still entertained by some writers, it may be useful to point out that, in the year referred to, this period was marked by a temperature of about 5° below the average, by less extremes of temperature than the preceding and succeeding periods, and by much greater humidity than is common in our climate at that season. The conditions which attend the epidemics are not of importance on this theory, except so far as affording an opportunity for the propagation and distribution of the poison; but if we consider that an essential predisposition to the attack of cholera is an exhausted nervous system, or a state of that system in which exhaustion is rapidly induced, we must also note the accompanying conditions. These were, in 1854, the highest range of temperature, the greatest daily variation and inconstancy of temperature, and excessive dryness of the air. There are, therefore, three separate sets of conditions which it is imperative to bear in mind. First, the anterior and introductory ones of lower temperature, less variation of temperature, and greater humidity of the atmosphere. Second, the concomitant conditions of high temperature, great daily variation, and excessive dryness of the air. Third, the suddenness and the period of the change when the former set of conditions passed into their opposites. This took place, in the two epidemics, in different weeks of the year, but yet in each *immediately* before their great development, and must, therefore, not be passed over without due consideration.

It is manifest that all these conditions succeeding to each other, but inseparably connected together, are fitted to exercise an exhausting effect upon the sensitive organization of man greater than that which would probably result from the isolated action of any of them.

I have purposely refrained from any continued reference to these conditions in the epidemic of 1849, since they have already been detailed by the best authorities; but as

the foregoing remarks need, for their due appreciation, certain points of contrast with the conditions of 1849, I have prepared Diagram 2, which exhibits the contrast of temperature free from any other lines. At the first glance it will appear that there are great diversities between the two lines of 1849 and 1854 under each of the heads of inquiry, but a little closer examination will show that the peculiarities now detailed in reference to 1854 are in the main supported by the diagram for 1849. The key to the solution of the apparent difficulty is the fact that the development of the epidemic of 1849 preceded that of 1854 by about six weeks, and if this be used, it will be discovered that much less dissimilarity exists upon the diagram than at first sight appears.

The questions of temperature relating to 1849, as contrasted with those already given for 1854, may be thus briefly stated:

The whole of the year, as well as of each quarter, had a temperature somewhat higher than that of 1854. The two years began at the same degree but ended by a difference of eight degrees, 1849 being then the colder. In the 22d week of 1849 the temperature had become very high, and was then higher than in the 28th week of 1854. In the 28th week the maximum was attained, and this was not only greater than in 1854, but preceded the maximum of the latter year by seven weeks. The highest range of temperature endured in 1849, from the 28th to the 36th week (9 weeks), whilst that of 1854 was from the 30th to the 35th week (6 weeks), and from these periods in both years the temperature rapidly declined. In 1849, therefore, the high temperature commenced earlier, was more elevated, and endured longer than in 1854, but in both years alike the sudden elevation corresponded with the period of the development of cholera, and the decline of the temperature with the recession of the attack.

The daily variation was somewhat less in the early spring of 1849 than in 1854, and at that period the highest point

was five weeks later than in the latter year; but the sudden increase of the variation in the summer quarter preceded that of 1854 by about six weeks, and the acme was attained about nine weeks earlier than in 1854. In both years the period of elevation was that of the development of the epidemic, and about that of the sudden increase of temperature.

The lines indicating the difference between the temperature of the air and the dew-point, in reference to the two years, correspond pretty closely in the first and fourth quarters, but differ in the second and third quarters, and this difference is, as in the preceding instances, very much that of the period when the increase began. In the latter part of the second quarter the degree of humidity was less than at the same period of 1854; but whilst the greatest degree of dryness in 1849 was observed in the 27th and 28th weeks, and continued in an elevated but yet lessening degree until the 38th week (12 weeks), that of 1854 occurred in the 29th, 30th, 33d, 34th, 35th, and 36th weeks, (with an interval of depression in the 31st and 32d weeks), and continued until the 39th week (11 weeks). As in the preceding remarks the period of the marked increase of the dryness was that of the commencing development of the disease, the greatest daily variation and the highest degree of temperature.

Thus the characteristics of the year 1849, in reference to temperature and cholera, very much corresponded with those of 1854; and the two years mutually support each other, if the difference between the period of development of the epidemic in the two years be borne in mind.

In conclusion, we have not at present information on other meteorological points of so precise a nature as those now detailed in reference to temperature; but it yet suffices to enable us to make the general statement, that at the season of the year when cholera has prevailed, there have been a very small fall of rain, large accumulations of electricity in the atmosphere, and a prevalence of south-westerly winds of small motor force. These circumstances,

in addition to those associated with heat, produce that state of the atmosphere which is known by the terms "sultry," "oppressive," and "close," and which has so well-known a tendency to induce exhaustion both of body and mind. To these may further be added certain sequential occurrences, which tend materially to increase their effect. Thus the long continued heat and want of rain cause the springs to cease, and with them a suitable supply of pure, fresh water; the beds of rivers and pools to be exposed to the action of the sun, and with it the exhalation of malarious gases; and, at the same time, the sewers in our towns not being flushed with an abundant supply of water, the filth moves but slowly, and remains long enough to pour out nauseating and narcotising gases at every trap-hole. All these must be familiar to every one; but the latter is best known to the inhabitants of this metropolis, who find it needful, at that season of the year, to avoid an inspiration on approaching a trap-hole, in order to avert the deadly effects of inspiring the fetid gases. It has not uncommonly been noticed that the opening of sewers has been apparently the immediate cause of the appearance of cholera in a district, a circumstance rather to be explained, on the known action of poisonous gases, than on the emission of any organic poison-cell.

But perhaps one of the most potent concomitant influences is that tendency to the decay of animal and vegetable life which so universally abounds at that season of the year. It is probable that too little importance has been attached to this influence, and in order to estimate it, we must consider it both negatively and positively: negatively by the negation of those sanitory powers which are doubtless exercised by both animal and vegetable life at its seasonal origin and activity, as in the spring and early summer; and positively, by the return to gaseous elements of the structures of which both animals and vegetables are composed.

It is well known that in tropical climes the scourge to which we now refer is vastly more virulent in its operations

than in cold or even in temperate regions; for there the heat is the greatest, the stagnation of the air more perfect, the electricity more extensively accumulates, and, with the vast development of animal and vegetable life, there is at this season a corresponding decay. There sultriness attains its acme, and induces a degree of listlessness and exhaustion which happily is not known in these regions. There, from doubtless the same causes, fevers of the most malignant nature, probably closely allied to cholera, rage at the same season yearly, and drive out, not only men, but birds and the beasts of the forest, to the upland districts.

ON A

SUCCESSFUL METHOD OF TREATING

ACUTE RHEUMATISM

BY

LARGE AND FREQUENT DOSES OF BICARBONATE OF POTASH.

BY

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FINDING that, although much had been attempted in improving the treatment of acute rheumatism, the disease, under the most approved plans, was still often very intractable, I was induced, about three years since, to seek some other method; and, from certain considerations, tried the one now to be detailed. The success attending my early trials appearing very great, I resolved to continue the use of it for a lengthened period, so as to arrive at some true estimate of its value; and the present communication contains the result of the treatment of 51 attacks of this disease, in 50 separate patients, admitted under my care in University College Hospital, from May, 1852, to January, 1855, a period of two years and three quarters. The patients were not selected, but the plan was adopted in all cases of the disease admitted into my wards. Every effort was made

to keep the treatment simple, as will be seen by the table, in order that the real influence of the drug employed might be accurately determined. My plan has been as follows:

To administer the bicarbonate of potash, in two scruple doses, dissolved in an ounce and half of water, every two hours, night and day, until the joint affection has ceased for three or four days; in one or two cases, a drachm has been given every hour; in two or three others, half-drachm doses, and occasionally three hours' intervals have elapsed.

Local depletion by leeching over the cardiac region has been employed when any endo- or peri-carditis has been present, and sometimes a very small depletion from the arm, rather for the purpose of obtaining blood for examination that for any therapeutic effects anticipated from it.

There is considerable difficulty in fixing exactly the date at which this disease may be said to have disappeared; and doubtless, in the cases tabulated by many observers, cessation from pain has been taken as the indication. But a state of system may exist after the joints are free from active pain, and even without the presence of any cardiac affection, which requires but the smallest exciting cause to bring back the articular or heart affection in all its pristine intensity; and patients in such a state, although free from pain at the time, cannot with any justice be considered rid of the disease. In my own cases, I have looked upon the following condition of the patient as indicating real freedom.

Absence of pain and any acute tenderness of the joints.

Freedom from any active cardiac affection.

Absence of marked thirst, with returning appetite; and lastly,

No unusual rapidity or hardness of pulse.

The details of the following cases have been taken from my hospital case-books; and I may state that until within the last month, I was quite ignorant of the numerical results which they would show, although fully aware that the plan had been very successful. My great object having been to obtain accurate results, every care was taken to

prevent deviations from the main plan; the few which occurred will be noted in the table, except, perhaps, that an *occasional* dose of an aperient, the senna mixture of the hospital, may have been administered by the nurses; this, however, was never done, except upon pressing occasion from prolonged constipation.

'Among so many cases, complications from other diseases must necessarily have sometimes interfered with the duration and progress of the rheumatic affection; such complications have been also noticed.

As it would be almost impossible and unnecessary in a communication of this kind to give a full account of all the cases, I have selected three which have been detailed as far as necessary for our object, and have formed a table of the remainder, in which will be found the principal points of interest each patient's case exhibited, both before and during treatment, and the exact plan adopted.

Case I.—Mary Cathie, æt. 10, admitted into University College Hospital, October 23rd, 1854; has lived in London two years, is at present at a school of refuge; has generally enjoyed good health, is not known to have any hereditary tendency to rheumatism.

On the morning of the 20th, when at school, felt much pain over dorsum of left foot, and soon afterwards was unable to stand upon it; had a warm bath, and some medicine, and went to bed; next morning attempted to get up, but had soon to return to bed, the affection extending to legs and thighs, and the next day (23rd) to hands, &c. For about a week this patient has had a little cough.

State on 24th.—Pulse 120; tongue furred in centre; bowels regular; skin hot, but without eruption of any kind. Both ankles and feet, hot, swollen, red and tender; left knee much swollen, hot, very painful, and somewhat red; right knee affected in a less degree; wrists better to-day. Respirations 40; some dry cough, and pain in left side; friction (pleuritic) heard about one inch below, and two inches to the left, of left nipple. Pain in side, increased by coughing.

Urine passed early in the morning, strongly acid, copious urate deposit; no albumen.

Commenced on the afternoon of the 23rd the following treatment:

℞ Potassæ Bicarbonatis, ℈j,
Aquæ, ℥j; ft. haustus.
To be taken every three hours.

Three leeches to left side.

To-day was ordered to repeat the medicine every two hours.

October 26th.—Pulse 110, rather hard; tongue furred, red at the tip; skin hot, no marked perspirations; bowels open yesterday. Knees and ankles much improved; complains most of left wrist, which is hot and swollen, and the dorsum of hand is red; little finger also affected; right wrist less painful than left. Cough troublesome; friction-sound heard over left side, but no pain in the side at present. Urine strongly alkaline.

28th.—Pulse 85, small and not hard; appetite returning, tongue but very slightly furred, no thirst.

Complains of no joint-affection, and can move limbs freely; cough much better; pleural friction still heard; urine strongly alkaline. To take the medicine four times a day only.

31st.—Continues free from all joint-affection, and seems quite well. Some friction still heard. To take medicine night and morning only.

This patient was afterwards ordered some infusion of columba with the ammonio-citrate of iron, as she was rather anæmiated, and in a few days discharged quite well.

It will be observed that the joint-affection and febrile symptoms in this case lasted only five days under the treatment, and that their total duration did not exceed eight days. The heart did not appear to be in any degree affected, and the only complication to the articular disease was the slight inflammation of the left pleura.

Case II.—James St. George, æt. 20, born of English

parents, in the West Indies; has lived in England nine years, occupation a barman; has not enjoyed good health since he has lived in this country. Does not know that he inherits any predisposition to rheumatism, but he himself has had many attacks in which several of his joints have been swollen and red.

The present attack commenced on the 24th of October, in the shoulders; the knees, ankles, and hands, have subsequently been affected.

State of patient on admission, November 1st, 1854.—Pulse 112, full and hard; skin hot and perspiring very freely; tongue furred, much thirst, no appetite; bowels much confined. Left knee much swollen and tender; also right wrist and both shoulders. Patient does not complain of che t, but heart's action is very violent. No increase of cardiac dulness; loud systolic murmur of a sawing character heard at apex; heard also at base, but not so loud. Pericardial friction sound over heart's region, some intercostal tenderness over the same parts; was ordered to take directly a dose of house-medicine, to be cupped to four ounces over cardiac region, and the following medicine:

℞ Potassæ Bicarbonatis, ℈ij,
Aquæ, ℥iss; ft. haustus.
To be taken every two hours.

November 2nd.—Joints of upper extremities worse; pulse 120; bowels open; pains much increased at night.

4th.—Chiefly complains of left wrist; right wrist less affected: pulse 106; less friction-sound; no intercostal tenderness. Endocardial murmurs less loud; urine strongly alkaline.

7th.—Pulse 85, soft; two fingers of left hand are now the only affected parts; no thirst, returning appetite, tongue almost clean. Heart's action quick, friction scarcely heard, and murmurs much less intense; urine strongly alkaline.

8th.—No joint affection; pulse 80, soft. Appetite good; patient feels well. To take the medicine every four hours in the day.

No further joint or cardiac affection ensued; and, in a few days, the patient, wishing to return to his employment, was ordered to take for a short time, decoction of bark, with half drachm doses of the bicarbonate three times a day. Endocardial murmurs were heard both at base and apex, with first sounds, probably he had some old heart affection from prior rheumatic attacks.

In this patient, the duration of disease before treatment was seven days; during treatment, not more than eight, making in all fifteen days. It will also be observed that the cardiac affection appeared to yield rapidly to the local depletion, combined with the administration of the bicarbonate of potash, and without the use of any mercurial.

Case III.—Elizabeth Fisher, æt. 18, single; admitted November 19th, 1853; a servant by occupation; has always lived and clothed well. For the last nine years has been subject to acute rheumatism, during which time four distinct attacks have occurred previous to the present one.

Last week was exposed to cold from kneeling on cold stones; on the 15th inst. had pain in both ankles which caused her to keep her bed; after a day or two the knees were affected, and she was then admitted into the hospital.

19th.—Pulse 135, rather hard; tongue furred; appetite bad. Both knees swollen, hot, painful, and tender; immoveable; both ankles also affected, right most; shoulders rather tender. Was ordered the following medicine:

℞ Potassæ Bicarbon., ℈ij,
Aquæ, ℥iss; ft. haustus.
To be taken every two hours.

20th.—Ankles and knees relieved; catamenia present; some tightness felt in chest; no friction over cardiac region, or endo-cardial murmurs. Twelve leeches ordered over heart.

21st.—Had a dose of house-medicine, as bowels had been &c., ned for some days. Shoulders more affected, also pain, confiof elbows and wrists, and some of the smaller joints of

hands. Knees and ankles much relieved. Joints much more painful at night. Pulse 120, full and hard; tongue furred; skin hot. Catamenia ceased in the night. Urine distinctly acid to-day, had not been before examined; to continue medicine each hour.

22d.—Pulse 108, less full and hard; thirst diminished; joints of lower extremities free from pain, those of upper less swollen and much relieved. No discomfort from the medicine. Urine alkaline. Catamenia returned.

24th.—Pulse 94, rather small; slept better; wrists moveable, but painful; shoulders still very tender.

26th.—Pulse 84, small, soft; tongue slightly furred; bowels open. Has taken the medicine every two hours since last night. Joints now free from pain, moveable; some tenderness of right wrist.

28th.—Quite free from any joint-affection. Pulse 72. To take medicine every four hours.

29th.—Pulse 72. Appetite pretty good.

December 3d.—Was ordered quinine, and in a few days Pulvis Ferri (fer reduit), there being some slight anæmia. Patient had no trace of rheumatism after this time.

In this case it will be remarked that the patient had been subject to acute attacks of rheumatism during nine years, and the duration of the joint-affection had never been less than a month on previous occasions; in two of them she had been in an hospital.

The duration of the disease from the time the potash treatment was commenced did not exceed eight or nine days, and the total duration from its first invasion twelve or thirteen days.

As the affection had been so severe and obstinate in all its previous visitations, I was induced to give the medicine in very frequent doses, and for two days two ounces of the bi-carbonate were taken each twenty-four hours, without the slightest uncomfortable symptom being produced.

TABLE OF CASES OF

Females.

Name.	Date.	Age.	Occupation.	Hereditary Predisposition.	Number of Attacks.	Cause of.	History of present Attack before Plan of Treatment.
Eliz. Ash.	June, 1852.	40	Married, 9 children.	To rheumatism, none.	Third; first, 14 years since: second, some years after; both acute attacks.	Cold.	Commenced about 5 days since in ankles, gradually ascending to other joints, and increasing in intensity up to time of treatment.
Jane Smith.	May, 1852.	35	Laundress.	None.	First.	Sudden alternations of heat and cold, also moisture.	About 5 days; first right instep, then both knees and ankles.
S. Curtis.	July, 1852.	23	Servant.	None.	First.	Cold and wet feet.	About a fortnight, not exactly given; at first ankles, knees, and loins were affected; had taken some aperient, and also a colchicum mixture, for about 2 or 3 days.

RHEUMATIC FEVER.

Symptoms at commencement and during Treatment.	Symptoms referable to Heart.	Duration of Disease under Potash Treatment.	Total Duration of Attack.	Nature of Treatment.	State of Health afterwards.
June 14th.—Both shoulders, elbows, wrists, hips, knees and ankles affected with swelling, redness, and much pain; pulse 105, hard; tongue white furred; thirst. After commencement of treatment had no fresh joint affection. 17th.—Joints much improved. 19th.—No swelling, but pain on movement; tongue clean, with returning appetite; pulse 80. The patient had some slight chronic pains of joints, to which she had been subject before.	No proof of *recent* affection; murmur with first sound both at base and apex; moderate action of heart.	Duration of inflammatory symptoms, not more than 6 days.	Joints inflamed, about 11 days.	June 14th.—VS. ad ʒvj, Pot. Bicarb., ϑij, every 2 hours, dissolved in water (an ounce and half.) 19th.—Pot. Bicarb., ϑij, ter in die, afterwards a quinine and acid mixture, and iodide of pot. for the chronic pains.	Good. Has chronic pains.
May 27th.—Right knee and ankle very tender and painful, and slighter affection of left, some swelling of joints; pulse 108, hard, not very full; tongue furred, thick, and white; perspires much. 29th. — No joint-affection, complains of weakness. June 1st.—No joint-affection; tongue clean, appetite good.	No distinct affection; some murmur at base with first sound; no immoderate action.	2 days.	About 7 days.	May 27th.—Pot. Bicarb., ϑij, Aquæ, ʒiss, 3 tis horis. 29th.—Repeat Haust., ter in die. June 1st.—Inf. Columba, ʒj, Ammonia Sesqui. Carbon. gr. iv, ter in die.	Good. First sound of heart at base slightly murmurish.
July 4th.—Pain, swelling, and tenderness of hands, wrists, and shoulders; also of hips, knees, and ankles; tongue furred, thirst, loss of appetite. 6th.—Joints relieved, wrists not swollen, less thirst; tongue cleaner; pulse 80, not resisting, but pretty full; perspires freely; less pain last night. 7th.—Joints almost well; tongue clean. After this date joints were no more affected.	July 4th.—A soft blowing murmur at base, with first sound; no inordinate action of heart.	Not more than 3 or 4 days.	Between 3 and 4 weeks.	Pot. Bicarb., ϑij, Mist. Camph. ʒiss, every 2 hours.	Good. Slight murmur heard at base, probably anæmic.

Name.	Date.	Age.	Occupation.	Hereditary Predisposition.	Number of Attacks.	Cause of.	History of present Attack before Plan of Treatment.
E. Webber.	July, 1852.	17	Servant.	Not stated.	First.	Cold and wet.	Had sore throat from cold; and about the 13th, left ankle was swollen, extended to other joints; no treatment.
Jane Wray.	Oct. 1852.	12	—	Not stated.	First.	None known.	Oct. 2d. — Some swelling of left foot, afterwards hands became affected, and remained so till admission.
E. Withey.	Oct. 1852.	26	Servant.	None.	First severe attack; appears to have had a slight one a few weeks before.	Cold at first.	About 5 days before admission the shoulder, elbow, and knee of right side, became affected.
Reb. King.	Nov. 1852.	21	Servant.	None mentioned.	Second; first when 12 years old.	Cold.	Had a violent cold about 18 days previous, with some tenderness of joints, which became relieved; and ten days since, left foot and ankles, right wrist and hand, afterwards knee, became affected.

Symptoms at commencement and during Treatment.	Symptoms referable to Heart.	Duration of Disease under Potash Treatment.	Total Duration of Attack.	Nature of Treatment.	State of Health afterwards.
16th.—Swelling, heat, and tenderness of left ankle and right knee, other joints less affected, pain in back; tongue much furred, great thirst, much perspiration; pulse 100, bowels confined. 17th.—Joints somewhat relieved, no fresh joints affected. 20th.—Knee and ankle quite well.	Some pain in left side; soft murmur with first sound at base and apex; murmur probably anæmic and pain hysterical, as found afterwards.	4 days.	About 7 or 8 days.	July 17th.—Pot. Bicarb., ℈ij, Mist.Camph.℥iss, every 3 hours; pill and draught first for bowels; six leeches to cardiac region, afterwards some antispasmodics and tonics for hysteria.	Well, except a little hysterical; some venous murmur, as well as soft cardiac murmur.
Oct. 8th.—Both ankles and wrists, and dorsum of hands swollen and tender; thirst; pulse 100, full and sharp. 12th.—All joints well; pulse 82; tongue clean, appetite returning.	Oct. 8th. Murmur, with first sound at base (blowing in character), and at apex a murmur of a much rougher kind; much palpitation.	4 days.	10 days.	Oct. 8th.—Pot. Bicarb., ʒss, Aquæ Menth. pip., ℥iss, every 3 hours. 10 leeches to cardiac region.	Somewhat anæmiated. Venous murmur in neck.
14th.—Right wrist and hand much inflamed; slighter affection of right ankle; pulse 96, rather hard; perspires freely; tongue furred. 16th.—Joints less painful; pulse 78. 19th.—Joints not affected; pulse 64, not resisting; no return of joint-affection; some slight stiffness; pulse 72.	None. Murmur heard at base (systolic) on evening of 13th, not heard on 14th.	6 days.	11 days.	13th.—Pot. Bicarb., ℈ij, Aquæ, ℥iss, every 2 hours.	Good.
Nov. 4th.—Left knee swollen, tender, and red; right shoulder and muscles of neck affected; pulse 108, full, rather hard; tongue furred; much thirst. 6th.—Right wrist red and swollen, and several small joints of hands; pulse 120. 8th.—Joints easier; pulse 110. 9th.—Pulse 100; joints much relieved, none swollen; skin cold; much less thirst. 13th.—No tenderness of joints; pulse 80; no thirst; appetite returning.	Blowing murmur at base, with first sound, which soon became much diminished.	About 8 days.	18 days.	Nov. 4th.—Pot. Bicarb., ℈ij, Mist.Camph.℥iss, every 3 hours. 6th.—Every 2 hours. 11th.—3 times a day. 4th.—6 leeches to cardiac region; 4 oz. of blood from arm. One dose of house-medicine.	Good.

Name.	Date.	Age.	Occupation.	Hereditary Predisposition.	Number of Attacks.	Cause of.	History of present Attack before Plan of Treatment.
Catherine Lockyer.	Nov. 1852.	25	Laundress.	None to rheumatism.	First.	Cold and damp.	A week since, ankles, hips, and knees, and afterwards several joints in upper extremities became affected; had been much exposed, in a drying room, to the steam of wet linen.
Sarah Southcott.	Nov., 1852.	26	Married.	None to rheumatism.	First.	Debility from inflamed breast, and afterwards cold from washing.	23 days before had pain and swelling of knees, ankles, and feet; then elbows, hands, and shoulders became affected; upper extremities becoming lately more affected.
Amelia Ransom.	Dec., 1852.	25	Servant.	—	Second; first occurred 9 years since.	Cold and wet feet.	Dec. 5th.—Left hand became affected, afterwards right hand, then knees and feet.
Eliz. Fisher.	Nov., 1853.	18	Servant.	Rheumatism from mother.	Fifth; first when 9 years old; last about 4 months since.	Cold and wet.	Four days since, ankles became affected, then knees, &c. Former attacks had always lasted from a month to five weeks; sometimes treated in an hospital.

Symptoms at commencement and during Treatment.	Symptoms referable to Heart.	Duration of Disease under Potash Treatment.	Total Duration of Attack.	Nature of Treatment.	State of Health afterwards.
Nov. 30th.—Right ankle, knee, hip, wrist, elbow, and shoulder swollen, hot, very painful, some of them red; left knee, hip, and shoulder less affected; pulse 116, wiry; much thirst; skin hot, freely perspiring. Dec. 4th.—Can move lower extremities, upper still painful. 9th.—Joints free from pain, except some stiffness on movement; pulse 88. 11th.—Only a little tenderness of right wrist; no further joint-affection.	None.	About 10 or 11 days.	18 days.	Nov. 30th.—Pot. Bicarb., ℈ij, Mist. Camph., ℥iss, every 2 hours. Patient did not take this quantity, not more than ⅔ds, by error; and the urine did not become alkaline for some days. Patient had much irritability of bladder when taking medicine. 30th.—VS. ad ℥iij.	Good.
Nov. 29th.—All joints of left arm much affected, swollen, tender, red; right elbow and wrist less affected; both knees swollen; tenderness also of left ankle; pulse 108, full, hard; thirst; skin hot and moist. Dec. 2d.—All joints well; pulse 64, weak; appetite returning; no joint-affection from that time.	None.	3 days.	26 days.	Nov. 29th.—Pot. Bicarb., ℈ij, Mistura Camph., ℥iss, every 3 hours. VS. ad ℥iij.	Good.
Dec. 9th.—Right elbow and wrist, left wrist and hand swollen and tender; knees and ankles likewise affected; erythematous eruption over skin of whole body; skin hot; thirst; pulse 108. 11th.—Pulse 96; joints relieved, still very painful at night. 14th.—Pulse 88; no swelling of joints since 12th.	None.	4 days.	8 days.	Dec. 9th.—Pot. Bicarb., ʒss, Aquæ, ℥iss, 3 times a day. VS. ad ℥iij.	About 9 or 10 days after last date, Dec. 14th, had typhoid fever, but left quite well.
Nov. 19th.—Both knees and ankles swollen, hot, and tender; shoulders painful; pulse 135; tongue furred. 21st. — Shoulders, elbows, wrists, and hands affected; joints of lower extremities much better; pulse 120, full and sharp. 22d.—Joints much relieved; pulse 108. 26th.—Joints almost well; pulse 84. 28th.—Joints free; pulse 72.	None. Some tightness in chest for a day or so; no murmur or friction.	8 or 9 days.	13 days.	Nov. 19th.—Pot. Bicarb., ℈ij, Aquæ, ℥iss, every 2 hours. 21st.—Every hour. 25th.—Every 2 hours, then every 4 hours; soon had a tonic and iron.	Good. Slightly anæmic; to continue the iron.

Name.	Date.	Age.	Occupation.	Hereditary Predisposition.	Number of Attacks.	Cause of.	History of present Attack before Plan of Treatment.
Eliza Wiggins.	Dec., 1853.	43	Married.	Rheumatism from father.	Second; first at the age of 16.	Cold and damp.	After a few days' illness, on Dec. 18th, knees, hips, and left arm became affected; on the 20th, the jaw on the left side.
Eliz. Smith.	Dec., 1853.	27	Married.	Rheumatism from mother.	First.	Cold and damp.	Oct. 16th. — Left knee became red, &c.; other joints became subsequently affected.
Lousia Emberson.	March, 1853.	31	Married.	Rheumatism from father.	Third; first 6 years ago, which kept her in bed 5 weeks: second 3 months ago, lasting the same time.	Not stated.	Three weeks since joints of arms and legs became affected; those of right and left side alternating.
Jane Shay.	Dec., 1852.	39	Married, 7 children.	Father had rheumatism.	First.	Exposure to cold and damp.	Three weeks before, after great exposure, shivering and pain in feet, knees, hips, and afterwards upper extremities.

Symptoms at commencement and during Treatment.	Symptoms referable to Heart.	Duration of Disease under Potash Treatment.	Total Duration of Attack.	Nature of Treatment.	State of Health afterwards.
Dec. 21st.—Left hand and wrist red, swollen, hot, and painful; shoulder swollen, and left side of head and neck; both ankles, feet, and knees much affected; hips also painful; pulse 96, hard. 24th.—Joints painful, but not swollen; some very slight jaundice; pulse 84. 27th.—Left shoulder and second finger of hand only affected; pulse 84; yellowness diminishing. 29th.—Joints only slightly painful, no fresh joint-affection.	Slight murmur, with first sound, at first.	9 days.	12 days.	Dec. 21st.—Pot. Bicarb., ℈ij, Aquæ, ℥iss, every 2 hours; VS. ad ℥iij; 2 or 3 doses of house-medicine, and for a few nights ¼gr. of morphia.	Good.
Dec. 23d.—Both ankles, knees, and hips, shoulders, elbows, wrists, and dorsum of hands more or less tender, swollen, and red; the swelling extends to the tip of fingers; no pitting; pulse 105, hard; much thirst; skin moist; pains much increased at night. 26th.—Left wrist and knees only affected; pulse 95; less thirst; perspires freely. 31st.—Joints not swollen and can be moved freely without pain. Jan. 3d.—Pulse 75; appetite good; joints remain quite well.	No cardiac affection.	8 days.	15 days.	Dec. 23d.—Pot. Bicarb., ℈ij. Aquæ, ℥iss, every 2 hours; VS. ad ℥iiij. 29th.—V.S. ad ℥iiij; for 1 or 2 nights, took ¼gr. dose of morphia.	Good. Slightly anæmiated, ordered to take iron.
March 22d.—Both knees and left ankle swollen; wrists and shoulders very painful; fingers red and swollen; pains increased at night; pulse 96; thirst; tongue furred. 25th.—Left knee still painful, and right wrist and shoulder; other joints very much relieved; pulse 96, small; no thirst. 26th.—Scarcely any pain in joints. 28th.—Free from joint affection. After this time patient recovered rapidly.	Slight murmur at base, with first sound, on admission.	6 days.	27 days.	March 22d.—Pot. Bicarb., ℈ij, Aquæ, ℥iss, every 2 hours; VS. ad ℥iv.	Good.
Dec. 9th.—Pulse 100, hard; thirst; tongue furred; skin hot, moist; right wrist, hand, elbow, shoulder, and right knee swollen, very painful, and tender. 11th.—Joints of right upper extremities relieved; yesterday left wrist became swollen, &c.; pulse 84, rather hard. 14th.—Much relieved; pulse 80; less thirst; left wrist but little tender. 16th.—Appetite returning; no joint-affection; after this time patient rapidly recovered; slight tenderness of left wrist remained for a few days.	None.	7 days.	—	Dec. 9th.—Pot. Bicarb., ℥ss, Aquæ, ℥iss, every 3 hours. 11th.—Draught to be taken every 2 hours. 16th.—Every 4 hours. 9th.—VS. ad ℥ij.	Good.

Name.	Date.	Age.	Occupation.	Hereditary Predisposition.	Number of Attacks.	Cause of.	History of present Attack before Plan of Treatment.
Eliza Winn.	April, 1853.	34	Married, 5 children, last born a few months since.	None known.	First.	Not known. Had been unusually weak since last confinement.	About a week ago was laid up with the joint-affection.
Hannah Keting.	May, 1853.	17	Servant.	None known.	Second; first 8 years since, has had short breath since that time.	Damp rooms.	Rheumatic symptoms of a fortnight or three weeks' standing, previous to that, had a bad cold and cough.
Mary Robinson.	May, 1854.	17	Nurse-maid.	None to Rheumatism.	First.	Cold.	About 5 days before admission, after shivering, ankles became swollen; she put them into cold water three times, the left hand soon became affected; afterwards wrist, elbow, and shoulder. On the day of admission the right arm became similarly affected.

Symptoms at commencement and during Treatment.	Symptoms referable to Heart.	Duration of Disease under Potash Treatment.	Total Duration of Attack.	Nature of Treatment.	State of Health afterwards.
April 4th.—Left wrist, elbow, and shoulder very painful; on right side these joints less affected; knees and ankles swollen and painful; much thirst, and perspiration; pulse 96. 7th.—Joints of upper extremities much better; right knee still painful; ankles relieved. 9th.—Appetite returning. 12th.—No joint-affection after this period, and no further rheumatic symptoms.	None.	8 days.	—	For 4 days previous to April 4th, had taken a French depurative syrup, and was bled to ʒiv; no relief, but fresh joints became affected. 4th.—Potassæ Bicarb., ϑij, Aquæ, ʒiss, every 2 hours. 12th.—Every 4 hours.	Good.
May 11th.—Wrists and right knee chiefly affected, but complains of pain in all limbs; pulse 96; tongue furred; perspires freely; much thirst; pains increased at night. 13th.—Pains in joints much diminished. 14th. — Joints much improved; pulse 108. 19th.—Pain and tenderness in left ankle. 26th.—Pain in right knee; slight swelling; no joint-affection after this date.	On admission much friction-sound over cardiac region; afterwards increase of cardiac dulness.	12 days.	30 days.	May 11th.—Pot. Bicarb., ϑij, Aquæ, ʒiss, every 2 hours. 12th.—Increase Bicarb. to ʒj. 13th.—12 leeches to heart. 17th.—Blister to cardiac region. 24th.—Potassæ Iodid., gr.iij to be added to draught which was, or should have been taken three times a day on the 21st. The heart-affection was afterwards treated with calomel and digitalis.	Good, except subject to palpitation, shortness of breath, &c., as before admission.
May 16th.—Both ankles, hips, wrists, and dorsum of hands, were very much swollen, hot, and red; pulse 120, full and hard; tongue furred; much thirst; no appetite; skin hot, perspires much. 18th.—Joints of right arm much affected; left, tolerably free from pain; right knee and ankle somewhat red; pulse 95, not hard. 20th.—Joints still painful, but not swollen; pulse 65. 23d.—Joints not swollen or tender, but left arm a little painful; tongue clean; appetite good; no subsequent joint-affection.	May 16th.—Rough murmur, with first sound at base; heart's action excited; some tightness and pain over cardiac region. 23d.—Murmur at base softer, after a few days scarcely audible.	7 days.	12 days.	May 16th.—Pot. Bicarb., ϑij, Aquæ, ʒiss, every 2 hours; 12 leeches to cardiac region; VS. ad ʒiv. 18th.—Morphia, gr. ¼, at night and repeated for a few nights.	Good.

Name.	Date.	Age.	Occupation.	Hereditary Predisposition.	Number of Attacks.	Cause of.	History of present Attack before Plan of Treatment.
Mary Ann Meredith.	Sept., 1854.	16	Servant.	None to rheumatism.	First.	Cold and wet feet.	About 3 days before admission, inner side of ankles became swollen and painful; afterwards, knees and some joints of upper extremity.
Han. Mack.	Oct., 1854.	40	Laundress, married.	Not stated.	First.	Cold and wet, when weak subsequent to some chest diseases.	About 4 days before admission, knees became swollen and painful, which caused her to lay up.
Mary Cathie.	Oct., 1854.	10	Child at school.	Not known.	First.	None given.	3 days before admission, had pain in left foot, was unable to stand, the disease extended to other joints in a day or two.
Mary Bruce.	Nov., 1854.	19	Servant.	None to rheumatism.	First.	None known	About a week before admission, was obliged to lay up from pain and swelling of ankles and feet; but a fortnight before had some pains in these parts.

Symptoms at commencement and during Treatment.	Symptoms referable to Heart.	Duration of Disease under Potash Treatment.	Total Duration of Attack.	Nature of Treatment.	State of Health afterwards.
Sept. 28th.—Ankles, knees, right hip, some small joints of right hand, elbows, and right shoulder very painful and hot, some swollen and red; pulse 108, sharp; skin very hot; tongue furred; much thirst. 30th.—Ankles tender, other joints much relieved; pulse 95. Oct. 2.—Left hip became affected; other joints much relieved. 4th.—No joint-affection; pulse 65; tongue clean; skin cool.	Sept. 28th.—Murmur, with first sound at base; heart's action excited.	6 days.	9 days.	Sept. 28th.—Pot. Bicarb., ʒij, Aquæ, ℥iss, every 2 hours; 12 leeches to cardiac region.	Good; slight murmur at base, and venous murmur at neck; was ordered iron.
Oct. 10th.—Both shoulders, left elbow and wrist, and both knees affected; left knee much swollen; tongue furred; much thirst; pulse 112, hard. 12th.—All joints well, except knees; pulse 78. 14th.—No joint affection; pulse, 60.	None.	4 days.	8 days.	Oct. 10th.—Pot. Bicarb., ʒij, Aquæ, ℥iss, every 2 hours. One dose of house-medicine.	Good.
Oct. 23d.—Both ankles and feet hot, swollen, tender, and red; both knees similarly affected, left most; wrists painful; pulse 120; tongue furred. 26th.—Knees and ankles much improved, and moveable; left wrist, back of hand, and little finger most painful, also red and swollen; right wrist less so; pulse 110. 28th.—No joint-affection; pulse 85; no thirst.	No heart affection, but slight pleurisy on left side; distinct pleural friction lasting some days; cough.	5 days.	8 days.	Oct. 23d.—Pot. Bicarb., ʒj, Aquæ, ℥j, every 3 hours, 24th, every 2 hours; 3 leeches to left side of chest.	Good.
Nov. 7th.—All the large joints of body, and several small joints of each hand, very painful, tender, hot, and immoveable; pulse 125; skin hot; tongue furred. 9th.—Joints improving, especially those of upper extremities. 11th.—Joints free from pain and moveable; still tender on deep pressure; pulse 72, easily excited. 12th.—No joint-affection, not even tender on pressure; pulse, when quiet, 56.	Nov. 7.—Loud friction at apex, extending upwards; no increased cardiac dulness. 9th.—Cardiac dulness extends to upper border of second rib. 12th.—No friction sound; no increased cardiac dulness.	5 days.	12 days.	Nov. 7th.—Pot. Bicarb., ʒij, Aquæ, ℥iss, every 2 hours. A dose of house medicine; 12 leeches to heart. 14th.—Another dose of house-medicine.	Good.

Name.	Date.	Age.	Occupation.	Hereditary Predisposition.	Number of Attacks.	Cause of.	History of present Attack before Plan of Treatment.
Bridget Kale.	Oct., 1854.	26	Washer-woman.	None to rheumatism.	First.	Cold and wet.	For several weeks has had some slight swelling of wrists and hands, then of feet; right knee became painful just before admission.
Mary Kemshed.	Nov., 1854.	46	Cook.	None.	Second; first, 7 years ago, since which has been subject to pains in joints.	Cold and damp.	About a fortnight before, had pain and swelling in ankles and other joints; did not leave off work till 2 days before admission.
Christiana Chapman.	Nov., 1854.	59	Needle-woman.	None known.	At 11 years of age had rheumatic fever, between which time and the present had at least eight distinct attacks, usually lasting a very long period.	Cold.	10 days previously had pain in loins, then hands, shoulders, ankles, and muscles of neck became affected.

Symptoms at commencement and during Treatment.	Symptoms referable to Heart.	Duration of Disease under Potash Treatment.	Total Duration of Attack.	Nature of Treatment.	State of Health afterwards.
Oct. 19th—Both ankles and knees tender, right knee swollen, pains worse at night; pulse 75; thirst. 21st.—Joints much relieved; metacarpal joint of one thumb very tender; pulse 60. 24th.—Joints somewhat stiff. 26th.—No joint-affection.	None.	7 days.	?	Oct. 19th.— Pot. Bicarb., ℈ij, Aquæ, ℥iss, every 4 hours. Dose of house-medicine, and a dose of castor oil.	Good.
Nov. 14th.—Right shoulder, left wrist and hands, both hips, left knee and ankle considerably affected, many joints red and swollen, others less so; skin moist; pulse 120, rather hard; tongue furred; more pain at night. 16th.—Left wrist less swollen, and other joints distinctly improved. 21st.—Pulse 84; but little joint-affection. 25th.—Free from joint-affection. 27th.—Some slight return in left hand, lasting only a few hours; no further joint-affection; pulse 78.	Systolic murmur at apex; no reafriction, probably this arose from old affection as patient had been subject to short breath before admission.	12 days.	26 days.	Nov. 13th.— In evening commenced the following Potass. Bicarb., ℈ij, Aquæ, ℥iss, every 2 hours. 21st.— Every 4 hours in the day. 27th.— Every 2 hours, continued for a short time (about one day), and then every 4 hours in the day till Dec. 2, when a tonic was given, the decoction of Cinchona with ℥ss of Bicarb. of Potassa.	Good.
Nov. 16th.—Left wrist and hand red and swollen, right hand less so, ankles and hips also painful, &c.; pulse 100, rather hard; tongue furred; skin moist. 21st.—Pulse 85, not hard; joints much relieved, but stiff, especially left hand. 25th.—Left hand and wrist still affected. 28th.—No swelling of joints, but left wrist remained stiff and weak for some days; pulse 80.	None.	12 days.	22 days.	Nov. 15.— In evening commenced Pot. Bicarb., ℈ij, Aquæ, ℥iss, every 2 hours, 25th.—Every 4 hours. A dose or two of house-medicine, and castor oil were given.	Good.

Name.	Date.	Age.	Occupation.	Hereditary Predisposition.	Number of Attacks.	Cause of.	History of present Attack before Plan of Treatment.
Eliza Quin.	Nov., 1854.	15	Servant.	None known.	Second; first, 6 years since.	None given.	During nearly 3 months, she has suffered from pains in different parts; but has been laid up about 3 weeks. On admission Nov. 4th, the joints being so little affected took Camphor mixture only. On the 6th, heart's action became irregular and intermitting. On the 9th, pain in the left shoulder.
Eliza Eck.	Feb., 1854.	43	Widow.	Father had some joint affection.	First. Patient has always been very weakly, especially within the last few years.	None assigned.	About 9 days since, had pain in left hip, and afterwards right knee and ankle became swollen and red. On the 14th, was treated with Colchicum for 2 days, without relief.
Mary Goves.	Nov., 1852.	18	Servant.	None to rheumatism.	Second; first about a year since.	None known.	Four days previously had shivering, followed by inflammation of the various joints of both upper and lower extremities, with high febrile symptoms.

Symptoms at commencement and during Treatment.	Symptoms referable to Heart.	Duration of Disease under Potash Treatment.	Total Duration of Attack.	Nature of Treatment.	State of Health afterwards.
Nov. 9.—Affection of left shoulder; tongue furred; pulse 95. 11th.—Pain in shoulder removed. 16th.—Remained free from pain till this morning; was exposed to cold last evening, and to-day feels both ankles and right wrist painful; pulse 96, hard; some thirst; tongue furred. 18th.—Ankles still somewhat tender. 21st.—No joint-affection.	Before commencement of treatment had occasional intermission of heart's action, and some systolic murmur at base which disappeared.	11 days.	Doubtful.	Nov. 9th.—Pot. Bicarb., ℈j, Aquæ, ℥vj, every 4 hours in the day. 16th.—Pot. Bicarb., ℥ss, Aquæ, ℥iss, every 3 hours in the day only. On the 18th, it was ordered every 2 hours night and day, and to be continued till the 20th, when it was given night and morning only till the 25th.	Good.
Feb. 17th.—Both wrists and hands red and swollen, right shoulder painful, ankles and left knee less affected; pulse 108, rather hard, but small; tongue furred; much thirst. 21st.—Wrists less swollen, right ankle and shoulder very painful; pulse 120, hard. 25th.—Much improved; no pain in joints; right ankle swollen, but not red; pulse 95; perspires freely. 28th.—No rheumatic affection of joints, and no return after this date.	Feb. 20th.—Pericarditis discovered, for which eight leeches were applied to region of heart; no amount of effusion took place, and no symptoms of heart affection over 25th.	About 9 days.	18 days.	Feb. 17th.—Pot. Bicarb., ℈ij, Aquæ, ℥iss, every hour; ⅛ gr. of Morphia, night and morning. On account of purging from Colchicum did not commence medicine in full doses till evening of 18th. 19th.—Medicine every 2 hours. 21st.—Medicine every hour. 25th.—Every 2 hours. 28th.—Every 3 hours, after that, Decoction of Cinchona and Ammonia.	Patient had a bed-sore a few days after admission which prolonged her stay in hospital. She left well.
Nov. 16th.—Ankles and knees affected, on right side, swollen; both wrists and back of hands red and swollen; many small joints also; pulse 134; skin hot; much perspiration; urine decidedly albuminous. 20th.—No joint-affection, and for the last few days the heart-disease has been most prominent; pulse 96; continued to improve until the 27th, when she was exposed, almost uncovered, to the draught of a door, an attack of acute pleurisy was induced, and for a day or two there was some pain in joints, which very soon passed off.	Nov. 16th.—Rough murmur at apex, with first sound; action excited. 18th.—Friction sound over heart's region; breathing difficult.	Joint-affection 5 days; appetite returning in about 8 or 9 days.	13 days.	Nov. 15th.—Potas. Bicarb., ℈ij, Aquæ, ℥iss, every 2 hours; 20 leeches to heart; the subsequent pleurisy was treated by means of leeches, a blister, tonics, with iron were afterwards given.	Good, except evidence of the heart-affection.

Name.	Date.	Age.	Occupation.	Hereditary Predisposition.	Number of Attacks.	Cause of.	History of present Attack before Plan of Treatment.
Sus. Reeves.	Jan., 1855.	20	Servant.	Mother and sister have had acute rheumatism.	Second; first 2 years since. Some heart-affection at that time.	None assigned.	Suffered from amenorrhœa before rheumatic attack, which commenced Dec. 31st, 1854, in loins and thighs, then knees, &c., became affected.
Sarah Rayne.	Jan., 1855.	17	Servant.	None known.	Second; first about 3 years since, which lasted 6 weeks.	None assigned.	Commenced on the 9th, and on the 10th was unable to move; (no treatment before admission;) at first left ankle, then all joints became affected.
Ann Clarke.	March, 1855.	30	Servant.	None known.	First attack.	Cold.	About 14 days since; knees and hips became affected; kept about, although quite unfit to do anything.

Symptoms at commencement and during Treatment.	Symptoms referable to Heart.	Duration of Disease under Potash Treatment.	Total Duration of Attack.	Nature of Treatment.	State of Health afterwards.
Jan. 4th.—Knees and ankles hot, swollen; both wrists, some smaller joints of hands swollen, tender, all very painful; skin hot, moist; pulse 120, hard; (commenced treatment last night, and joints somewhat easier to-day.) 6th.—Has been rather delirious since last night, this came on after the morphia; joints much relieved, and quite moveable; tongue much furred. 7th. — Much improved, almost before the calomel was given; no delirium. 9th.—Pulse 84, not hard; hands stiff; no gum-affection; no delirium. 11th. — No joint-affection; pulse 84; tongue nearly clean.	Pain and tightness over cardiac region; friction at base; dulness in second interspace. Jan. 6th.—Cardiac dulness extends to first interspace; friction heard in second, near sternum. 9th.—Cardiac dulness to second interspace.	7 days.	11 days.	Jan. 3d (evening) Pot. Bicarb., ℈ij, Aquæ, ℥iss, 2nd hora; Hirudines, vj, regione cordis; Morphia Hydrochlor., gr. ⅓, nocte sumend. 6th.—Hirudines, xij, regione cordis; Calomel, gr. ij, 4tis horis. Continued the mixture up to Jan. 13th, every 2 hours; then every 4 hours in the day, for a few days.	Good.
Jan. 15th.—All the larger joints of body acutely affected, and many smaller ones, of both hands and feet, swollen, painful, very tender, and red; pulse 120, hard; tongue furred; skin hot and moist. 17th.—Joints much relieved; pulse 105, less hard. 20th.—Pulse 110, soft; left shoulder, wrist, and ankle affected; other joints pretty well; shoulder very painful. 23d.—Pulse 95, soft; right shoulder only affected; tongue but slightly furred. 27th. — Had tenderness of knees on 25th; at present free from joint-affection; right shoulder a little painful when moved much. No joint-affection after this date.	Jan. 15th.—Dulness of second interspace; friction at base, and systolic murmur at apex. 23d.—Dulness between third interspace; friction heard at base, and murmur at apex. No cardiac dulness.	12 days.	18 days.	15th.—Pot. Bicarb., ℈ij, Aquæ, ℥iss, every 2 hours. 25th.—Took medicine regularly till 23d, when for 2 days only had it four times in the 24 hours. Repet. Haust. 2nd hor.	Good.
March 25th.—Knees swollen and red; both hips painful, also shoulders; skin hot; perspiration; much thirst; pulse 110, weak and jerking; (aortic regurgitant.) 28th.—Much easier; heart's action quieter.	March 25th.—Loud murmur at base, with first sound, and a prolonged murmur with	Of joint-affection, 9 days.	23 days.	March 25th.—Pot. Bicarb., ℈ij, Aquæ, ℥iss, every 2 hours; a dose of house-medicine; VS. ad ℥iij. Continued the	Went to service; health pretty good, except heart-disease.

Name.	Date.	Age.	Occupation.	Hereditary Predisposition.	Number of Attacks.	Cause of.	History of present Attack before Plan of Treatment.

Symptoms at commencement and during Treatment.	Symptoms referable to Heart.	Duration of Disease under Potash Treatment.	Total Duration of Attack.	Nature of Treatment.	State of Health afterwards.
30th.—Knees and shoulder much easier, but wrists now affected; pulse 85. April 4th.—Pulse 68; wrists now well, and other joints also; can move them pretty freely. Patient after this date suffered from palpitation, &c., and was treated for the heart-disease.	the second; some fric- near the apex.			Potash till the joints had been free for some time.	
June 29th.—Left hand and wrist much affected; also some joints of right hand swollen and tender; knees, hips, and shoulders painful and tender; pulse 108, full, hard; tongue furred; skin perspiring, with a pungent odour; great thirst. July 1st.—Pulse 72; both hands much relieved; other joints pretty free. 6th.—Pulse 64, not hard; appetite good; joints pretty well, only stiff. From this date joints remained quite well.	None.	7 days.	11 days.	June 29th.—Pot. Bicarb., ℈ij, Aquæ, ℥iss, every 3 hours; a dose of house-medicine.	Good.
May 22d.—Both ankles and knees much affected, red, swollen, and tender; shoulders very painful; pulse 96; (after several hours' treatment) patient febrile. 25th.—Knees and ankles relieved; shoulders less painful; pulse 72; tongue much less furred; perspires freely. 27th.—Joints nearly well. After this date no joint-affection.	May 23d.—Some murmur, with both sounds at base, and with first sound at apex. 27th.—Murmurs much decreased at base, scarcely heard at apex.	5 days.	10 days.	May 22d.—Pot. Bicarb., ℈ij, Aquæ, ℥iss, every 2 hours; VS. ad ℥vj; 8 leeches over heart; a senna draught.	Good.
Aug. 2d.—Both wrists swollen, red, and painful; both ankles and knees painful; pulse 100, full and sharp; tongue furred; skin perspiring with sudamina; much thirst. 5th.—Wrists free from pain; left knee still slightly swollen. 7th.—Joints well; no further joint-affection; patient remained a few days febrile, with sudamina.	Murmur with first sound at base.	5 days.	11 days.	Aug. 2d.—Pot. Bicarb., ʒj, Aquæ, ℥iss, every hour; VS. ad ℥iv; blood much buffed and cupped; Rhubarb draught.	Good; a little weak.

Name.	Date.	Age.	Occupation.	Hereditary Predisposition.	Number of Attacks.	Cause of.	History of present Attack before Plan of Treatment.
John Kitchenside.	Nov., 1852.	35	Brick-maker.	None known to rheumatism.	Second; first 7 years since, which lasted about a month.	Cold and wet.	For about 2 months has had occasional pain and swelling of joints, which became better, and again returned on exposure to cold; for a week has been confined to bed.
James Aldridge.	Dec., 1852.	34	Cabman.	Not stated.	Second; first 8 years ago.	Cold and wet.	About 2 days since shivering; right hand became swollen; then several other joints.
John Abbey.	May, 1853.	22	Butcher.	None to rheumatism.	First.	None assigned.	About 4 days before admission, had pains in back, then in thighs and legs, which compelled him to keep his bed, and rendered him incapable of movement.
Thomas Temple.	April, 1853.	16	Not stated.	Not stated.	Not stated.	Not stated.	Not given in hospital books; most joints affected some days before, and increasing in severity.

Symptoms at commencement and during Treatment.	Symptoms referable to Heart.	Duration of Disease under Potash Treatment.	Total Duration of Attack.	Nature of Treatment.	State of Health afterwards.
Nov. 12th.—Both hands red and swollen, with some œdema; both knees swollen and tender; tongue furred; much thirst; pulse 88, full and hard; pains much worse at night. 16th.—Joints not swollen; wrists and hands somewhat stiff; no thirst; pulse 56; no further joint-affection; pulse fell to 44 before omitting medicine.	None.	4 days.	17 days. (?)	Nov. 12th.—Pot. Bicarb., ℈ij, Aquæ, ℥iss, every 3 hours.	Good.
Dec. 6th.—Both ankles and knees, both wrists and joints of fingers swollen and painful, some red; hips, elbows, and shoulders, tender and painful; pulse 108, hard; tongue furred; thirst; skin hot. 11th.—Joints much relieved; pulse 96, softer; perspires freely. 14th.—Pulse 76, not hard; can move joints pretty freely. 16th.—No joint-affection; pulse 70.	No cardiac symptoms.	9 days.	11 days.	Dec. 6th.—Pot. Bicarb., ℈ij, Aquæ, ℥iss, every 2 hours. VS. ad ℥iij.	Good. Patient on 28th had slight swelling of hands, not painful, which passed off rapidly under quinine and iron.
May 2d.—Hands, elbows, shoulders, and knees affected. 5th.—Joint-affection disappeared; appetite returning; pulse 72. No further joint-affection after this date. This patient was admitted during my temporary absence from hospital.	No cardiac symptoms.	3 days.	7 days.	May 2d.—Pot. Bicarb., ℈ij, Aquæ, ℥iss, every 2 hours. Patient took a pill and aperient draught before he commenced the treatment, and one powder (Pulv. Ipecac. c., gr. x).	Good.
April 23d.—Both ankles and knees very swollen, painful, and immoveable; ankles red; shoulders and wrists painful, the latter red; toes and dorsum of feet swollen and red; pulse 100, full and bounding; thirst. 26th.—Both hands affected; joints of lower extremities easier; pulse 84. 30th.—Only slight affection of left wrist; 2 days after this date no joint-affection left.	April 23d.—The pulse strong, with first sound at apex; some palpitation. 25th.—Complains of tightness of chest. May 6th.—Murmurs very slight indeed.	9 days.	?	April 23d.—Pot. Bicarb., ℈ij, Aquæ, ℥iss, every 2 hours. VS. ad ℥v. Afterwards Decoct. Cinchonæ.	Good.

Name.	Date.	Age.	Occupation.	Hereditary. Predispo-sition.	Number of Attacks.	Cause of.	History of present Attack before Plan of Treatment.
Hen. Webb.	March, 1853.	28	Coster-monger.	Not stated.	First.	Cold.	Seven days ago pain in left hip, afterwards ankles, knees, wrists, and hands, became affected.
John Goodhall.	Jan., 1853.	26	Labourer.	None to rheuma-tism.	First; but patient had some scro-fulous affec-tion of left knee-joint 12 years since, which has never quite healed.	Cold and damp.	Eight days since had swelling and redness of right knee, after-wards shoulders, el-bows, wrists, and hands, became affected.
William Kell.	Oct. 1853.	20	Carpenter	None to rheuma-tism.	First.	None known except ex-posure to a draught.	Six days ago much pain in back, then joints of lower ex-tremities became stiff and swollen.

Symptoms at commencement and during Treatment.	Symptoms referable to Heart.	Duration of Disease under Potash Treatment.	Total Duration of Attack.	Nature of Treatment.	State of Health afterwards.
March 31st.—Both wrists and hands swollen, red, and tender; many little joints affected; also both knees; pulse 96, hard; perspires much; tongue furred; great thirst. April 4th.—Wrists and knees better; much pain in both pectoral muscles. 7th.—Wrists and knees much better; pain in joints, chiefly at night; pulse 64. 9th.—Joints well; pulse 52.	None.	8 days.	15 days.	March 31st.—Pot. Bicarb., ℈ij, Aquæ, ℥iss, every 2 hours. April 2d.—The Potash salt was increased to grs. 52. As this patient complained very severely of pain, several doses of Henbane and Morphia were given.	Good.
Jan. 29th.—Pulse 108, hard; tongue furred; skin hot; much perspiration and thirst; left wrist and hand, right shoulder, right ankle and knee, considerably affected; many of these joints red and swollen. 30th.—Joints much easier. Feb. 1st.—Pulse 78; much better; perspires freely of an acid odour. 3d.—No swelling of joints; no thirst; appetite good. On the 12th, after exposure to an open window, had return of stiffness, and pain in some of the joints, with coryza, &c.; this yielded to the repetition of the medicine, but was followed by an attack of erysipelas, commencing in the diseased left knee.	Some murmur, with first sound at base.	6 days.	14 days.	Jan. 28th.—Pot. Bicarb., ℈ij, Aquæ, ℥iss, every 2 hours. VS. ad ℥iv. 2 doses of house-medicine.	Good, except chronic disease of knee-joint.
Oct. 29th.—Both wrists very painful, red, and swollen (these joints were first affected to-day), also both feet and ankles and right knees; pulse 84, hard; tongue furred; thirsty; skin hot; has perspired much. Nov. 1st.—Wrists much relieved; ankles painful; pulse 72. 3d.—Left ankle only swollen and red; pulse 58; appetite returning. 5th.—Free from pain; can move joints easily; pulse 48, weak. 8th.—No rheumatism after this date; pulse rose to 65 on omitting medicine.	No cardiac symptoms.	7 days.	13 days.	Oct. 29th.—Pot. Bicarb., ℈ij, Aquæ, ℥iss, every 2 hours. VS. ad ℥v.	Good.

Name.	Date.	Age.	Occupation.	Hereditary Predisposition.	Number of Attacks.	Cause of.	History of present Attack before Plan of Treatment.
William Kell.	Nov. 1853.	20	Carpenter	None to rheumatism.	Second.	Exposure to cold from returning to work too soon after above attack.	Soon after going to work some joints again became attacked; he was re-admitted.
William Kurm.	Nov. 1853.	13		Rheumatism from father.	First.	Cold and wet.	About 5 days since ankles became swollen, red, and painful, afterwards knees.
George Jones.	April, 1854.	30	Cabman.	None well marked to rheumatism.	Third.	Cold and wet.	A week since knees and ankles, afterwards left shoulder and elbow, became affected.
J. Jackson.	Dec. 1853.	31	Linen-draper's porter.	Grandfather had rheumatism.	Second; first about 3½ years since.		Had been ill for some weeks, but no joint-affection until about 4 days since, when it commenced in feet, extending upwards.

Symptoms at commencement and during Treatment.	Symptoms referable to Heart.	Duration of Disease under Potash Treatment.	Total Duration of Attack.	Nature of Treatment.	State of Health afterwards.
Nov. 22d.—Both knees and left ankle swollen and tender; pulse 100; thirst. 24th.—Pulse 66; knees still painful and tender. 26th.—Knees moveable, very slightly tender; pulse 60. 29th.—Joints pretty well; pulse 55.	—	7 days.	?	Nov. 22d.—The potash draught as before. 24th.—One ½ gr. dose of morphia.	Good, and remained so throughout the winter.
Nov. 19th.—Right knees swollen, hot, red, stiff, and painful; right ankle painful; some thirst; pulse 64; from 17th to 19th remained in hospital without medicine, and joints, which at first became relieved, were re-affected. 22d.—Patient quite well.	No cardiac symptoms.	3 days.	8 days.	Nov. 19th.—Pot. Bicarb., 3ss, Aqua, ℥iss, every 3 hours.	Good.
April 25th.—Left elbow swollen, hot, and painful; left shoulder very tender; joints of lower extremities pretty well; skin hot, moist; pulse 72; tongue furred; no appetite; (these symptoms were present after 24 hours' treatment as an in-patient, and a day or two of similar treatment at home). 27th.—Joints much relieved; pulse 56. 29th.—Quite free from pain; appetite returning; pulse 48.	Slight murmur with first, and louder murmur with second. At base some friction-sound heard near apex, which has ceased.	4 days.	11 days.	April 24th.—Pot. Bicarb., ℈ij, Aqua, ℥iss, every 2 hours. VS. ad ℥iij.	The valvular disease of heart arose during former attacks; patient had had short breath for some years.
Dec. 8th.—Right wrist, both ankles and knees painful, tender, and some joints swollen. Pulse 102, hard; tongue furred; thirst; pain much worse at night. 13th.—Right wrist and left knee most affected; pulse 96; appetite returning. After this date no marked joint-affection, but on the 17th a febrile attack came on, like slight typhoid fever, and, during the febrile state, some stiffness in joints formerly affected, but no decided joint-disease.	Slight murmur at base with first sound.	5 days.	9 days.	Dec. 8th.—Pot. Bicarb., ℈ij, Aqua, ℥iss, every 2 hours; 2 or 3 doses of house medicine. The febrile attack was afterwards treated in the ordinary way.	Good, except weak from febrile attack.

Name.	Date.	Age.	Occupation.	Hereditary Predisposition.	Number of Attacks.	Cause of.	History of present Attack before Plan of Treatment.
James Browning.	June, 1854.	16		Father had rheumatism in knees.	Second; first 18 months since.	Cold and moisture.	Five days before admission legs became swollen and painful, and two days since both hands became affected.
William Cragg.	Aug. 1854.	14		Not known.	First.	Damp room.	Six days since disease began in lower extremities, and extended to upper.
William Hooker.	Sept. 1854.	29	Painter, a subject of lead colic.	Father had rheumatic fever, and mother some joint-affection.	Third acute attack; first about 10 years ago; second 7 years since.	Not known.	Four days since had some colic, rheumatism commenced about two days ago in knees.
Daniel Crawford.	Oct. 1854.	25	Cabinet maker.	Father subject to rheumatism.	Second; first when 8 or 9 years of age.		About 7 days since, knees then hands became affected.

Symptoms at commencement and during Treatment.	Symptoms referable to Heart.	Duration of Disease under Potash Treatment.	Total Duration of Attack.	Nature of Treatment.	State of Health afterwards.
June 30th.—Both wrists, and several joints of hands, both shoulders very tender, swollen, and many of the joints red; elbow slightly painful; lower extremities have become relieved. July 1st.—Pulse 84; much perspiration, tongue furred, much thirst. 4th.—Right hand much relieved, left shoulder very tender and painful, but wrist and elbow improving. 6th.—Complains only of left shoulder, which is tender, but moveable; pulse 84; diarrhœa. 9th.—Joints free. 11th.—No joint-affection for two days; bowels irritable, tongue red.	No cardiac affection.	9 days.	14 days.	June 30th.—Pot. Bicarb., 3ss, Aquæ, ℥j, every 2 hours. VS. ad ℥ij. Oct. 6th.—A few doses of chalk and catechu for diarrhœa.	Good.
Aug. 8th.—All large joints in body affected, more painful at night; pulse 105, hard; skin hot; tongue furred; much thirst. 9th.—Joints free from pain. 11th.—Joints of right arm affected. 14th.—Joints pretty well; pulse 96; no joints affected after this date.	Aug. 7th.—tenderness over cardiac region; friction-sounds heard over same. 10th.—Cardiac dulness extends to second rib.	6 days.	12 days.	Aug. 7th.—Pot. Bicarb., ʒij, Aquæ, ℥iss, every two hours. 12 leeches to heart. 10th.—Blister to cardiac region.	Pretty good; free from all rheumatism.
Sept. 29th.—Both knees swollen, hot, and red, right ankle also affected; pulse 106; thirst; tongue much furred. 30th.—Left knee most affected; pulse 108. Oct. 3d.—Only right ankle painful and tender; pulse 86; appetite returning; thirst moderate. 5th.—All joints well since yesterday; pulse 78; appetite good.	No proof of recent heart-affection; loud murmurs with both sounds at base; has had much palpitation and hurried breathing for many years.	5 days.	9 days.	Sept. 29.—Pot. Bicarb., ʒij, Aquæ, ℥iss, every two hours. A dose of house medicine.	Good, except old heart affection; breathing now pretty good.
Oct. 4th.—Both ankles swollen and red, knees slightly tender, hands, wrists, elbows, less affected; pulse between 80 and 90; tongue furred; thirst; pain much increased at night. 7th.—Some small joints of hands still tender and painful; other joints much relieved; pulse 60; slight diarrhœa; gums slightly affected. 9th.—No joint-affection after the 8th.	Oct. 4th.—Friction over cardiac region. 10th.—No friction heard.	4 days.	11 days.	Oct. 4th.—Pot. Bicarb., ʒij, Aquæ, ℥iss, every 2 hours. Calom., gr. 1, Opii, gr. ¼, 4 times a day. Hirudines xij to heart's region 8th.—Omitted draught, and took chalk mixture. 10th.—Omitted pills, and continued draught every 4 hours.	Good.

Name.	Date.	Age.	Occupation.	Hereditary Predisposition.	Number of Attacks.	Cause of.	History of present Attack before Plan of Treatment.
James St. George.	Nov. 1854.	20	Bar-man, but does not drink.	None known to rheumatism.	Fourth attack.	None known.	Seven days since left shoulder and knee affected; shortly after, ankle, shoulder, and hand of right side.
Samuel Styles.	Jan. 1855.	27	Cow-keeper.	None to rheumatism.	First.	Cold.	Four days before had pain in wrists, knees, &c., with febrile symptoms.

Symptoms at commencement and during Treatment.	Symptoms referable to Heart.	Duration of Disease under Potash Treatment.	Total Duration of Attack.	Nature of Treatment.	State of Health afterwards.
Nov. 1st.—Both shoulders, right wrist, and right knee, severely affected; knee much swollen; pulse 112, full and hard; skin hot; perspires much; tongue furred; great thirst. 2d.—Pulse 120; lower extremities relieved; right upper more painful. 4th.—Wrists only affected; pulse 106. 7th.—Left little finger and right third finger the only parts now affected, and these but slightly; pulse 85; tongue clean; appetite good. 9th.—Pulse 80; no joint-affection. 11th.—Pulse 70.	Nov. 1st.—Double murmur at base, murmur with first sound at apex; friction and increase of cardiac dulness. 11th.—Murmurs as before, but softer; no friction. Endo-cardiac disease probably old.	8 days.	15 days.	Nov. 1st.—Pot. Bicarb., ℈ij, Aqua, ℥iss, every 2 hours. Hirudines, xij. VS. ad. ℥iv.	
Jan. 20th.—Both wrists, hands, elbows, knees, and hips, tender and painful, hands swollen; pulse 100, hard and full; tongue white furred; skin hot, moist, and sour; thirst; bowels confined. 23d.—Pulse 84; right shoulder, wrist, and hand painful; other joints relieved. 25th.—Pulse 72, not hard; perspires freely, odour sour; right wrist and left shoulder painful; other joints pretty well. 27th.—Some exposure to cold has caused a slight relapse; yesterday joints were free; pulse 72. 29th.—Free from any joint-affection, except slight tenderness of left shoulder on pressure. 31st.—Remains free from joint-affection; feels well.	None.	9 days.	13 days.	Jan. 20th.—Pot. Bicarb., ℈ij, Aqua, ℥iss, every 2 hours. Haust. Sen., ℥iss. 30th.—Repet. Haust. Sennæ.	Good.

From an examination of the above table, we arrive at the following results.

In 20 cases of acute rheumatism, occurring in males, the average duration of the disease, under the treatment adopted, was 6·2 days, and the total duration of the attack 11·3 days; in 31 cases of the same disease, in females, the average duration under the treatment was 7·3 days, and the total duration 15·7 days, making in all about 6·7 days for the average duration under treatment, and 13·5 days for the average duration of the attack.

In many cases, especially among the females, as some time had elapsed before they came into the hospital, it might be argued that the disease had partially cured itself, or that some prior treatment might have tended to shorten its duration after admission into the hospital; but the closer investigation of the cases will not allow of such interpretation, for, on selecting a given number in which the disease had continued for a long period before the treatment was commenced, and comparing them with an equal number in which the disease had been treated early, no very perceptible difference can be discovered. There can be little doubt but that genuine rheumatic fever, under all modes of treatment yet known, will run a certain course, and is not capable of being at once extinguished; but, again, it seems probable that its duration, under adverse circumstances, may be almost indefinitely prolonged; of course assuming a more asthenic character, as the powers of the patient become enfeebled.

The complication with cardiac disease, especially when sufficient to influence the effectiveness of the circulation, seemed to have some influence on the total duration of the joint-affection, and, although for a day or so, the limbs appeared almost free from disease, yet the liability to recurrence was well marked; as if a metastatic action from time to time took place, and the system were unable to rid itself entirely of the poison. Such, however, was not constantly the case.

The effects observed during the administration of the

large and repeated doses of the bicarbonate of potash were as follow:

On the Intestinal Canal.—No vomiting was induced; in the only case in which it occurred, the patient had been taking, up to the time of its administration, strong doses of colchicum, and after a day the use of the bicarbonate in drachm doses was perfectly tolerated, even without nausea. As a rule the patients rather liked the medicine, as it tended to allay the excessive thirst; when the febrile symptoms had abated, and the appetite was returning, some dislike occasionally arose to its very frequent repetition.

The bicarbonate of potash has no marked action on the lower portion of the intestinal canal; no purging was produced; the apparent exceptions were three in number, and all of them occurred during the autumn of last year, 1854, when cholera was raging in London; other patients were then similarly affected, and there was no good reason for ascribing it to the use of the drug.

On the Urinary Organs and Urine.—In two cases, females, there was some irritation of the bladder; in one it occurred when the patient was convalescent; the medicine was discontinued, and the symptoms vanished; in the other it lasted only a day or so, although the use of the bicarbonate was persevered in. No marked increase in the quantity of urine was observed; this point, however, was not very carefully noted, from the great difficulty of saving the whole of the urine in acute diseases.

On the character of the urine the influence of the medicine was strongly and invariably marked; this secretion becoming very alkaline in reaction, but not ammoniacal, with a deposition of triple phosphates. I may here state, that I have usually found eight scruples of bicarbonate of potash given to a healthy person in divided doses, sufficient to render alkaline the twenty-four hours' urine, but sometimes more, sometimes less is necessary; in rheumatic fever, a larger amount is generally requisite to induce alkalinity, and when the febrile symptoms are very intense, for a time even the two scruple doses, given every two hours, have failed to

produce this effect; in the cases in the table, the alkaline state was, for the most part, observed after the lapse of twenty-four or thirty-six hours, in some not for two or three days. I should never consider the patient progressing properly unless the urine produced a strongly marked brown stain upon turmeric paper, and, on the addition of an acid in excess, gave a distinct effervescence; urine of this character, on the addition of such acid, sparkles like champagne; its odour is also peculiar, not unlike toast and water, and in hot weather it is apt soon to become ammoniacal; no urate deposits are ever observed, although the secretion may contain much uric acid in solution.

The condition of this fluid may be frequently noticed with advantage, on account of its strongly marked alkaline reaction, serving as a proof of the medicine being properly administered, a circumstance not always attended to, especially when the doses are ordered to be often repeated. I mention this, as I have occasionally seen this treatment prescribed, although from the neglect of the nurse, most imperfectly carried out.

On the Skin and its secretion.—I can offer nothing very positive with regard to the action of the drug (when given as above directed) upon the cutaneous function; I have some reason to think that it tends a little to diminish the secretion, also to make it less acid; in one or two cases it appeared even to cause neutrality, but I have never found the perspiration alkaline, however long the patient had been under the influence of the medicine.

On the Heart and Circulation.—The large and frequent doses of bicarbonate of potash, certainly appeared to reduce rapidly the frequency of the pulse, and to diminish its hardness; if the table be examined, several instances will be found, in which, after the febrile state had been removed, the pulse was lowered to 48 or 50 in the minute; on discontinuing the medicine, it rose to the normal frequency; no faintness was induced in any case, and in this respect the action of bicarbonate of potash differs much from that of colchicum, digitalis, or antimony; and hence the presence of cardiac affection, such as regurgitant aortic

disease, diminishing the effective power of the circulation, is no obstacle to its employment.

Effect on the Blood.—It is very difficult to examine the effect on the alkalinity of the blood, as this fluid, in every case of acute rheumatism in which I have made the examination before treatment, has given a well-marked alkaline reaction to test-paper; it is, however, probable, and almost certain, that under the influence of the potash, the alkalinity is increased to a considerable degree. On the formation of the clot a great change is produced; and in several instances, when a small quantity of blood, about an ounce or so, had been drawn, to examine this point, a part of the fibrine, which would have otherwise formed the buff, has been deposited much more slowly than usual, and over the whole surface of the previously formed clot. The fibrine, which in inflammatory states of the system, and especially in acute rheumatism, forms the buffy coat, differs in properties from ordinary fibrine, and it is this altered portion which appears to be rendered less coagulable by the influence of the alkaline bicarbonate. Should this be the real effect of the medicine, its importance in preventing and lessening cardiac disease can be easily understood. No other marked influence of the bicarbonate on any organ or function was observed, and in no instance was any injurious effect produced.

Effects of the plan of treatment on the progress of the disease.—Besides the influence on the duration of the articular affection which has been alluded to, I cannot help thinking that an effect is likewise produced on the cardiac disease, to a very considerable and important extent. In no case did the affection of the heart ensue after the patient had been more than forty-eight hours under the influence of the medicine; and it has appeared to me, that even when present on admission into the hospital, or coming on within a short period, its progress was powerfully checked by the treatment, and prevented from producing the terrible mischief which, when uncontrolled, it so frequently induces; this I should be inclined to ascribe to the altered condition of

the blood, and especially of that portion giving rise to fibrinous deposits on the peri- or endo-cardium.

The method employed.—I stated, at the commencement of the paper, the main part of the plan of treatment adopted; certain small deviations were occasionally made, which require to be noticed. In many, even most of the cases, the administration of the bicarbonate of potash was the only means resorted to, from the patient's admission into the hospital until complete convalescence, and I believe that in the majority this would be sufficient for the cure. The use of other remedies was avoided, not from any idea that they would act injuriously upon the treatment, but in order that the results obtained from the bicarbonate might be more fully seen, in the absence of disturbing causes. There can be little doubt, however, that the proper employment of other remedies would often be of great service, if not to the ultimate result, at least to the comfort of the patient; and, among such adjuvants, anodynes, given cautiously, stand prominent.

Of the fifty patients submitted to the potash treatment, few took any preparation of opium; but occasionally the severity of the pain obliged me to have recourse to this drug, and then from a quarter to half a grain of hydrochlorate of morphia was given at night, and discontinued as soon as possible. It cannot be doubted that the proper use of opium is almost always desirable in the treatment of acute rheumatism in its most painful stage. Occasionally a few doses of the ordinary purgative house-mixture were given when the bowels were very confined; although cathartics, judiciously administered, are of great value in the treatment of the disease, their employment was much limited in the above cases, in order to prevent any decided purgative effect from influencing the result of the other treatment; their use was simply confined to the prevention of irritation from the presence of fæcal accumulation. Abstraction of blood from the arm was scarcely ever practised, except for the purpose of obtaining a

sufficiency of this fluid for examination, but from the effect which appeared to be sometimes produced even by such small losses, I have no reason to regret its employment; and am fully persuaded that small depletions, in the early stages of acute rheumatism, if the strength of the patient do not contraindicate them, are attended not only with immediate relief to the symptoms, but that they induce a condition of system more adapted for the absorption of internal remedies; at the same time, however, I consider that any blood-letting carried to the extent of producing debility, decidedly injurious, as lengthening the duration of the joint-affection, and much prolonging recovery. Local depletion, usually by leeching, was always practised whenever there was any evidence of distinct cardiac disease, sometimes, when the symptoms were suspicious only; of the use of such local depletion there can be little doubt in the minds of those who have had experience in the treatment of rheumatic fever; its value is, perhaps, more marked when pericarditis exists.

Mercurials were scarcely ever employed; in one case (a male) where pericarditis existed on admission, calomel in grain doses was given every four hours until there was slight affection of the mouth, the result did not seem to be much influenced by such addition to the treatment; in the other, a female having severe pericarditis and some delirium, calomel was also ordered, but before its administration, the symptom for which it was prescribed, namely the delirium, supposed to be connected with the cardiac affection, had almost completely subsided, and no trace of mercurial action could ever be discovered. With regard to the use of calomel or any preparation of mercury in the treatment of rheumatism, my opinion is, that they have no influence over the duration of the disease; but, at present, until further proof of their inefficacy has been shown, I should employ them in all cases in which severe cardiac disease was going on, believing that they have more power in causing the absorption of recently deposited lymph than alkalies or any other known remedies. This point I have recently had opportunities of testing in

cases of pleuritis, in which it appeared that the alkaline treatment by the bicarbonate of potash possessed great influence in preventing deposition, but that when the lymph was already deposited, its value in causing its absorption was far inferior to that of mercurials: I believe the same holds good in peri- and endo-carditis of a rheumatic character.

The mode of administration of the bicarbonate of potash is of much importance. It should be freely diluted; usually a mixture was given containing two scruples of the drug dissolved in an ounce and half of water; but not uncommonly further dilution to a considerable extent was effected by the addition of water, toast and water, or other mild diluent, or by some bland fluid being taken immediately afterwards; free dilution is desirable to promote the speedy absorption of the salt into the blood. In the cases above cited, plain water was made use of as the solvent, but the syrup of orange-peel or any other adjuvant could be employed. Febrile patients, however, often prefer a simple saline solution to a flavoured one, especially when very frequently administered. I believe it is important, also, that the medicine should be given at short intervals, so as to ensure its continued action, and prevent great accumulation, at any one time, which might ensue if the drug were taken in much larger doses and at lengthened intervals. It appears to me that a *certain condition of the blood* kept up for a long period is essential to neutralize the abnormal state of the circulating fluid existing in rheumatic fever.

Exceptional cases.—It is stated at the commencement of the paper that the cases were not selected, but that all patients suffering from acute rheumatism were thus treated. To avoid error, great care was taken in the diagnosis; acute gout, when it occurred, was separated from rheumatic fever, and likewise the acute articular affections depending on or connected with urethral disease. One or two cases of arthritis (mono-articular) were also excluded. A case of albuminuria and extensive cardiac disease is not introduced, the rheumatism forming but a very trivial portion of

the patient's sufferings; but I may mention that under the potash treatment all the rheumatic symptoms quickly vanished.

Plan of treatment advised.—From my experience in the treatment of acute rheumatism, I should advise the following method of proceeding:

To administer the bicarbonate of potash in a diluted form in two scruple doses every two hours, both during the day and night, unless the patient's condition allow of sound sleep, when the dose should be deferred for a time. To use water as the solvent, with the addition of some syrup, if preferred.

For children not above ten or twelve years of age, scruple doses will be sufficient, even less in very young patients; watching the condition of the urine as the criterion of the amount to which the system is under the influence of the medicine.

The occasional administration of mild purgatives, if necessary; taking care, however, when the joint-affection is very prominent, not to disturb the patient much, or to expose to cold; effects which would probably more than counteract any good effect of the aperients. I should advise as a purgative, the infusion of senna or powdered rhubarb, united to the tartrate of potash, as this salt would, to some extent, effect the same object as the bicarbonate.

If the pain of the joints be very severe, a small dose of opium, or some preparation of morphia, should be given at night, and repeated during the day, when necessary.

If any heart-affection be present, or even threatened, local depletion by leeches over the cardiac region, the amount depending on various circumstances, as also the need of repetition. Should the cardiac disease not readily yield, the use of small and repeated doses of calomel, guarded or not by opium, according to the effect on the intestinal canal. My reason for advising the use of mercurials I have before stated. General depletion, in the majority of cases, especially when occurring in large towns, is unnecessary, although it would often relieve the patient in the earlier stages, and cause the more efficient absorption of the medicines.

Peculiarities in the condition of patients, and complications which may arise, may demand small alterations in the plan; and in each case the details of treatment must be regulated according to the judgment of the practitioner.

The diet, in the early stages of the disease, should be strictly antiphlogistic; and too rapid return to an animal food be carefully guarded against, even after the return of the appetite is well pronounced. I then usually prescribe at first white fish, as soles or whitings, and in few days, gradually allow a more nutritious diet.

From what I have hitherto observed, if the early success continues to attend this mode of treating acute rheumatism, I cannot help thinking that the *total* duration of the affection may be reduced to about ten days, provided the patient is quickly brought under the influence of the medicine, and no powerful complicating causes exist.

Lastly, I may state, that I have received from many medical gentlemen to whom my method of treatment has become known, statements to the effect, that they have obtained from its employment, an amount of success in the treatment of acute rheumatism, which no other previous mode had ever yielded them.

CASES OF

PHLEBITIS WITH PNEUMONIA AND PLEURISY

FROM

CHRONIC DISEASE OF THE EAR.

BY

W. W. GULL, M.D.

Received Feb. 23d.—Read March 27th, 1855.

Amongst the cases of inflammation of the dura mater connected with disease of the ear, recorded by Abercrombie, is one of a young lady, æt. 15, where death occurred in an intermediate stage of the progress of the disease in the ear from suppurative pleuritis; but whether he recognised the chest affection to be the *direct* result of the chronic changes in the ear or not we are left to conjecture, since he makes no particular remarks upon it. Dr. Watson has more especially directed attention to this complication of general phlebitis with disease of the ear; although the illustrations he has given are defective, from the actual condition of the ear and the veins not having been ascertained by post-mortem examination. Dr. Wilde, in his work on 'Aural Surgery,' when treating of the cerebral affections connected with disease of the ear, goes on to say: "These cerebral symptoms do not, however, in every case appear to be the immediate cause of death. I remember two cases in particular, and I

suppose they are the types of many others of the same class, where the lungs became affected in the latter stage of the disease, and in which the thoracic affection seemed to be the immediate cause of dissolution." He also quotes a case laid before the Pathological Society (of Dublin), in 1840, of a boy, æt. 16, who, together with the cerebral symptoms arising from disease of the ear, had, towards the end, distressing cough, and severe pain along the right side of the neck. After death there was inflammation of the internal jugular, and superior vena cava, with fetid pus in the pleura, as well as purulent deposit in the cerebellum.

The following cases, which I wish to lay before the Society, are further contributions to this part of pathology. In neither of them had the cerebrum or cerebellum become the seat of disease, but the caries of the mastoid cells had set up local phlebitis, extending down the jugular vein, and producing an affection of the lung, which was, in all, the immediate cause of the fatal termination.

The first case is more especially worthy of note, as there were no external signs in the ear itself to direct attention to it, as the seat of the primary irritation.

The occurrence also of pneumothorax is rare, although the condition of the lung in these cases is such as frequently to bring the patient to the verge of such an accident.

Phlebitis of the Jugular Vein, Lobular Pneumonia, Pleurisy and Pneumothorax, from Chronic Diseases of the Ear.

Thomas Timmings, æt. 21, was admitted into Guy's Hospital, under my care, December 2d, 1854, and gave the following account of himself:

He says that, a week ago, he took cold, whilst working, as an engineer, in an exposed and marshy situation at Waltham. This was followed by sore throat, and stiffness about the neck. He has had several shivering fits, which he calls ague, frequent vomiting, and pain in the head.

His present symptoms are: skin hot and dry; pulse 100; tongue injected, with two broad streaks of yellowish fur

towards the centre; conjunctiva icterode. Complains of severe pain in the head. Face anxious; no delirium; abdomen contracted; muscles rigid; bowels inactive; nausea and vomiting; urine high-coloured without deposits; free from albumen. Pulmonary and cardiac sounds in all respects normal. Ordered—

Haust. effervescens, 4tis horis.

Dec. 3d.—Frequent vomiting; severe frontal headache; febrile symptoms as yesterday; no delirium.

5th.—During the last twenty-four hours has had two severe rigors, followed by increase of the febrile symptoms; no sweating. On placing him up in bed, to re-examine the chest, he is observed to move the head stiffly and cautiously. On inquiry, he says, he has tenderness over the mastoid process, and down the neck behind the ramus of the jaw on the right side, with deafness on the same side. The external auditory canal, and the surface of the membrana tympani, appear to be free from disease. He states that four years ago, when working in a coal-mine in Staffordshire, he received a blow on the right side of the head, which was followed by the deafness and discharge from the ear. The tenderness and slight fulness in the course of the jugular vein, and over the mastoid, indicate this as the seat of the irritation giving rise to his symptoms. Ordered—

Hirudines, vj, pone aurem dextram.
Mist. Magnesiæ c. Mag. Sulph.,
ad sedes liquidas.

6th.—Two rigors since last visit; pain in the head relieved; no incoherence, nor any degree of cerebral oppression. This morning began to complain of a painful stitch in the right side of the chest. A harsh pleuritic rub audible over the part. Pulmonary sounds otherwise normal. Ordered—

Hydrarg. Chloridi,
Opii, ana gr. ss.
6tis horis.
Rept. haust. effervescens.

7th.—The swelling behind the angle of the jaw, and in the region of the internal jugular behind the ramus of the jaw, more distinct. Deglutition painful. The vomiting has ceased. Passed a restless night. About midnight had a severe rigor, lasting about an hour, and followed by sweating for near the same time. Skin now hot and dry; pleuritic pain, and rubbing on the right side remain. Slight cough with expectoration of a small quantity of tenacious mucus tinged with blood.

Pergat.

8th.—A severe rigor last night, after which, to use his expression, he "could not get his wind for an hour or two." Now breathes tranquilly. Lies on his back. On exposing the chest, the right side was observed to be almost immovable and rounded; preternaturally resonant on percussion. The loud and harsh pleuritic rub of yesterday gone, and nothing now audible but bright amphoric breathing over the whole side (from pneumothorax ?). At the base posteriorly, near the spine, tubular breathing, with mucous crepitation. On the left side, under the mamma, slight pleuritic rubbing, and over the whole side puerile respiration. Tongue dry and brown; pulse 120; no delirium; frequent, short cough; no dyspnœa.

The diagnosis was *pleurisy and lobular pneumonia, from phlebitis, with perforation of the pleura pulmonalis.*

9th.—General condition as yesterday. A rigor about midnight lasting three quarters of an hour, not followed by sweating. Respirations 36; no dyspnœa; pulse 120; countenance suffused; slight cough. Condition of chest as yesterday.

Pergat.

10th.—Dyspnœa urgent; respirations 48; pulse 138. Dulness over the inferior part of the left chest. Fine crepitation, extending upwards to the scapular and axillary regions, and anteriorly as high as the second rib. The same tympanitic resonance, and amphoric breathing, on the right side.

11th.—Died at half-past one p.m.

Inspection of the body, twenty-five hours after death, by Dr. Wilks.—Body well nourished; muscles firm and well developed; brain healthy, with the exception of a slight superficial discoloration on the side of the right lobe of the cerebellum, from contact with the diseased dura mater. The brain substance had not undergone any change of texture. The right lateral sinus, at its commencement in the torcular Herophili, contained an adherent clot; further on in its course the contents of the sinus were fibrine, partly softened into a greyish, puriform fluid, and pus. The internal jugular vein was filled with the same at the upper part, and obstructed by an adherent clot as far down as its junction with the subclavian.

Over the petrous portion of the temporal bone, and continuous with the descending portion of the lateral sinus, the dura mater was sloughy. Pus lay between it and the bone, and was infiltrated along the coats, and into the sheaths, of the jugular vein.

The right pleural cavity contained a large quantity of air. The lung was collapsed to the spine. On blowing into the trachea with a blow-pipe, air escaped freely through two openings in the lower lobe. These communicated with two small cavities, one of the size of a filbert, the other smaller, formed by a slough of the pulmonary tissue; the result of lobular pneumonia. The contents were ash-coloured, puriform, and fetid. The pleura was covered by a considerable quantity of recent fibrinous exudation. There was about a pint of turbid fluid in the pleural cavity.

The left lung was universally affected with acute recent pneumonia, in the stage of early red hepatization. A small amount of plastic exudation upon the pleura. Heart and pericardium normal. Liver healthy. Spleen large, weight ten ounces avoirdupois; tissue soft. Kidneys healthy.

The left ear was free from disease. The external auditory canal of the right ear was healthy; the membrana tympani intact, and the malleus in situ upon it. The other portions of the chain of bones were loosened from their connections.

The lining membrane of the tympanum was thickened and vascular. There was caries of the posterior and superior wall, and of the adjacent mastoid cells, extending to the dura mater at two points; in one as it lies upon the superior part of the petrous portion, and in the other as it covers the floor of the lateral sinus.

Phlebitis, Pneumonia, and Pleurisy, from Chronic Disease of the Ear.

John Robertson, æt. 52, a native of London, and living nearly all his life in the neighbourhood of Bermondsey, married, and of sober habits, applied to me as an out-patient at Guy's Hospital, July 17th, 1854, complaining of feeling generally unwell, with headache, and loss of appetite. Two days previously he had had a slight rigor. The tongue was moist and furred white. The case was regarded as one of fever, and he was accordingly advised to come into the house. Not consenting to this, he was ordered a saline mixture of the citrate of potash. At his second visit, the following week, he was admitted into the hospital. His symptoms were of the same character as before, and were for the first few days still set down to the invasion of continued fever. Every second day he had a rigor, lasting about ten minutes. This was attributed to the influence of the locality in which he had been living. The headache, general oppression, malaise, and furred tongue, continued. The pulse was 70; skin moist. No enlargement of the spleen.

From July 24th to 28th he took—

Inf. Serpentariæ, ʒiss.
Ammoniæ Carb., gr. iv, 6tis horis.
Sherry, ʒvj.

On the 28th, the attacks of shivering returning daily, he was ordered—

Quinæ Disulph., gr. iij, in pil.,
4tis horis.

August 8th.—The rigors still return daily, lasting for ten minutes, not now followed by sweating.

Pergat.

19th.—Rigors less marked, but no improvement in the other symptoms.

Pergat.
Hydrarg. Chloridi, gr. v, st.
Ol. Ricini, ʒvj, post horas sex.

23d.—No rigor for last five days. The general symptoms continue, and their cause remains obscure; sleep disturbed.

26th.—Attention was at this time drawn to the left ear and the parts adjacent. It was observed that he had stiffness of the neck, and pain in rotating the head. He now stated that from childhood he had had, at times, a discharge of offensive fluid from the left ear, and that he was deaf on this side. Ordered—

Jul. Hydrarg. Bichloridi C., ʒij,
bis die.
Empl. Lyttæ nuchæ.

31st. — Shiverings more severe; face anxious; tongue loaded and brown; with the exception of slight delirium at night, no disturbance of the cerebral functions.

September 3d.—Complains of great pain down the left side of the neck, and towards the occiput. The parts are very tender, and he cannot suffer the hand to be moved on the spine. The rigors return daily, and are very severe. Tongue dry and brown; breathing frequent, with slight cough. Bed-sores beginning to form on the back.

Died September 11th, 1854, twenty-five days from the accession of his symptoms.

Examination thirty-six hours after death. — Purulent discharge from the left ear. Underneath the skin, and superficial textures, suppuration extending from the jugular fossa

downwards and backwards amongst the muscles. The adjacent parts of the temporal and occipital bones, down to the condyles, were necrotic, and of a dark colour. The internal jugular vein filled with a soft fibrinous coagulum and pus. The lateral sinus contained the same. The external surface of the dura mater, over the petrous portion of the temporal bone, and the walls of the lateral sinus, were dark coloured and much thickened. The coats of the internal jugular were also thickened, and involved in the suppuration amongst the muscles. With the exception of a slight discoloration on the left lobe of the cerebellum, unattended with exudation or change of texture, the brain and cerebellum were healthy. Right pleura contained a pint of purulent effusion, with patches of recent yellow exudation upon the surface of the lung. Both lungs presented the different stages of pneumonic consolidation, in some parts approaching to a state of gangrene. Heart and pericardium healthy. Abdominal viscera healthy. The mastoid cells were extensively destroyed by caries, and, as in the preceding case, the bone was perforated in two places, at the superior part of the petrous portion to the extent of a third of an inch in diameter, and to the same extent into the sulcus lateralis. The disease had apparently extended into the mastoid cells, from posterior wall of the external meatus, which at its commencement was cribriform from ulceration.

Phlebitis, Lobular Pneumonia, Pleurisy, &c., from Chronic Disease of the Right Ear.

George Lewis, æt. 23, was admitted into Guy's Hospital, July 22d, 1854, under the care of Dr. Habershon. He is ill developed, with a hydrocephalic head, boyish look, and half fatuous expression. He has been living in great poverty, and been much neglected. For a fortnight before admission, he had been suffering with febrile symptoms, and slight delirium. The case was regarded as one of continued fever. On admission, he was very prostrate; tongue dry,

lips parched; skin hot and perspiring; pulse frequent; evacuations of a dark colour; urine scanty, high coloured, and containing an abundance of triple phosphate. A considerable discharge of thin, bloody pus from the right ear; pain at the back of the neck, much increased by the slightest movement.

It appears that for several years he has been nearly deaf with the right ear, and for the last six weeks there has been a discharge, and pain from the mastoid process to the occiput, and down the neck. He has slight cough. At the base of the right lung there is dulness on percussion, bronchial respiration, and a well-marked pleuritic rub. There is much complaint of pain in the head, considerable oppression; an unwillingness to be disturbed, but no delirium or incoherence.

Radatur caput,
Embrocatio communis,
Inf. Serpentariæ,
Ammon. Carb., gr. iv,
Pulv. Cretæ Comp., gr. xv,
6tis horis.
Ung. Hydrarg. Fort. axillis infricandum.

July 24th.—Dulness at the base of the left lung. Condition of the right lung and other symptoms much the same.

Repetatur mistura,
Capiat pilulam, Antimonii Opiatam,
c. Hydrarg. Chloridi, gr. j, ter in die.
Empl. Lyttæ lateri dextro.

25th.—Cough, and rust-coloured expectoration; less febrile disturbance.

Repetatur pilula omni nocte tantum.
Julepum Acidi Nitrici c.
Vini Ipecacuanhæ, ℥x, 6tis horis.

27th. Profuse partial sweats. The pleuritic rub on the right side audible higher up; signs of consolidation remain.

On the left side moist râles, audible at the base; expectoration tenacious and puriform.

Inf. Serpentariæ Jul. Ammon. Acetat., āā ℥ss, c.
Ammon. Carb., gr. iv, 4tis horis.

28th.—Diarrhœa; dulness on the right side more extensive; skin hot and dry; there has been no delirium since admission.

Enema Amyli, c.
Tinct. Opii, ℥xx, statim.
Repetatur mistura.

30th.—He appears to be sinking; quite sensible. At 4·15 p.m. he died. About an hour before death he fell into a convulsion, with contracted pupils, which continued to the end.

Examination fourteen hours after death.—Behind right ear, under the integuments, extending down to the occipital condyle, tissue sloughing. The lining of the meatus auditorius externus thickened and vascular; the membrana tympani in the same condition; no ulceration. The tympanum full of dark-coloured exudation of the consistence of putty. The roof and posterior wall carious. The part of the occipital bone forming the floor of the lateral sinus carious; and the dura mater upon it sloughing. The cavity of the sinus and the internal jugular vein contain an adhesive clot, which in the centre is soft and puriform; surface of arachnoid slightly greasy; pia mater hyperæmic; convolutions rather flattened. Lateral ventricles enlarged, their lining membrane faintly granular. Section of white substance of brain mottled, and presenting numerous vascular points. (Death by asphyxia.)

In the right pleura twenty ounces of opaque serum with fibrinous flakes. Left lung partially adherent; at the base purulent effusion to the extent of several ounces. In the subjacent pulmonary tissue several lobules in a state of suppuration and disintegration. The upper lobe partially solidified and œdematous; in the right lung also, many

patches of suppurating lobular pneumonia. In the pericardium, an ounce and a half of clear serum; heart normal, except slight thickening of the aortic valves; abdominal viscera healthy; no trace of tubercle in any organ.

The anatomical relations of the ear to the veins would lead us, prior to experience, *to anticipate that affection of the chest would not be an uncommon result of necrosis of the mastoid cells;* and these, with other recorded observations, show that the lungs, as well as the brain, must be regarded as obnoxious to secondary affections from chronic disease of the ear.

NOTES ON LITHOTRITY,

WITH

AN ACCOUNT OF THE RESULTS OF THE OPERATION

IN

THE AUTHOR'S PRACTICE.

BY

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ALTHOUGH the operation of lithotrity has been for many years extensively and successfully practised in a neighbouring country, it has hitherto been adopted only to a limited extent by British surgeons; yet, if I may be allowed to judge from the results of my own experience of it, it must be regarded as a method of relieving those who suffer from calculus of the bladder which is attended with much less uncertainty and danger—being at the same time much less formidable to the patient—than the operation of lithotomy. With the strong conviction which I have of these advantages, I do not hesitate to comply with the desire lately expressed by our president, Dr. Copland, and formerly by his predecessor, Mr. Hodgson, that I would bring the subject before the Royal Medical and Chirurgical Society. In doing so, however, I do not presume to trouble the Society with anything like a systematic treatise on lithotrity. The object which I have

in view will be better obtained in a less formal way: and I propose, first, to communicate, in a series of notes, some observations as to those circumstances which are especially deserving of attention, as affecting the success of the operation; secondly, to give a brief but accurate account of the actual results which I have met with in my own practice, from the time when I first performed the operation, down to the present period; and, lastly, to add some observations as to the amount of danger involved in the removal of calculi by crushing compared with that which belongs to lithotomy. I can have no better opportunity than the present of offering such a communication, as, having for some time declined the operative part of my profession, it is not probable that any further delay will enable me to make any very important additions to whatever knowledge of the subject I now possess.

§ 1.

1. I have never performed the operation in young persons below the age of puberty. The operation of lithotomy in the cases of children is so generally successful that it has not appeared to me that, as to them, any deviation from the old method of treatment is required; while, on the other hand, the small capacity of the urethra, and the difficulty which must attend the introduction of a forceps sufficiently large to crush a calculus of any considerable size seems to render them unfit subjects for lithotrity.

There is another very sufficient objection to the last-mentioned operation in children; namely, that, instead of being completed at once, as in the instance of lithotomy, it is for the most part necessary that it should be repeated several times, and that such a repetition requires a degree of patience and self-control, and thought of the future, which children can scarcely be expected to possess.

2. I have not myself performed the operation of lithotrity on females. That I have not done so has arisen partly from the circumstance that in them cases of calculus of the bladder are rare as compared with those which occur in

the other sex, partly from the facility with which the female urethra may be dilated so as to admit of the extraction of a calculus of moderate size; and partly from the belief that the bladder would not easily retain the quantity of water necessary to the safety of the operation. I am, however, inclined to believe that as regards the last-mentioned objection I have been in an error, as Mr. Fergusson informs me that he has crushed calculi in the female bladder without difficulty, and with perfect success.

3. The forceps which I have been in the habit of using is that made by Weiss, with a handle sloping downwards, and a simple screw. For ordinary cases, a forceps of very moderate size is sufficient; for cases of very large calculi it is prudent to use a larger and a stronger instrument. I have never met with a single instance in which, however large it might be, a calculus once seized by the forceps did not yield readily to the pressure of the screw; or in which any harm happened from the bending or breaking of the instrument. I have lately seen a forceps in which the force intended for crushing the calculus is applied by means of a short cylindrical rod, introduced laterally, with some projecting teeth acting on a rack on the anterior part of the sliding blade. Such an instrument may afford some small advantage in the way of greater expedition, and so far may not be objectionable in cases of very small calculi, but it is evident that, as compared with the forceps with a screw, it must be very deficient in power, and that it would be very unsafe to have recourse to it in cases of calculi beyond certain dimensions.

4. The peculiar shape of the extremity of the forceps (without which it would not answer the intended purpose) renders it less easy to be introduced into the bladder than an ordinary sound or catheter, and a certain degree of force is generally required to enable it to pass through the urethra where it is surrounded by the prostate gland, such as is not at all necessary in using either of the last-mentioned instruments. The manœuvre necessary for this purpose cannot well be described in words, but it is easily

acquired, and it may be learned by practising on the dead quite as well as by practising on the living body. It is only in cases of considerable enlargement of the prostate gland that any real difficulty in the introduction of the forceps exists: but even in such cases I have never met with an instance in which the difficulty was not overcome by a cautious and gentle manipulation, nor with any in which any injury was done to the neck of the bladder in this part of the operation.

In using the forceps it is important that no attempt should be made to open the blades until the sudden cessation of the resistance offered by the prostate gland shows that they have fairly entered the bladder. The blades may be partially separated while a portion of the curved extremity is still in the urethra; but a certain effect of this is that the patient is subjected to much unnecessary pain, at the same time that there is great danger that the injury thus done to the verumontanum and orifices of the seminal ducts may induce inflammation of one or even of both of the testicles.

5. No prudent surgeon would willingly undertake the operation unless the bladder admitted of the injection and retention of from at least four to six ounces of tepid water. In cases in which the bladder has lost its power of retention, it may generally be restored by keeping the patient for a week or fortnight in the recumbent posture, and at the same time injecting some tepid water once daily into it. This method has failed with me only in a single instance. In consequence of the failure, I had recourse to lithotomy, and extracted a very large calculus, composed of the oxalate of lime, with angular projections on its surface, which sufficiently explained the irritable state of the bladder. The patient died in a few days after the operation.

Although, as has been just observed, the operation should never be attempted without the bladder having been previously distended with tepid water, it is worthy of notice that it has occurred to me sometimes to find that during the operation the whole of the water which had been

injected had escaped by the urethra, without my being at the time aware of the circumstance; so that many fragments must have been crushed in an otherwise empty bladder. On such occasions I have always been apprehensive lest some ill consequences should ensue. It is true that this did not happen in any one instance; still it is a thing that ought to be carefully avoided, as it is plain that any but the most careful manipulation with the forceps would be dangerous under these circumstances.

6. The most important part of the operation is undoubtedly that of seizing the calculus with the forceps; and this may be dangerous and difficult, or safe and easy, accordingly as the surgeon is or is not acquainted with the right method of proceeding.

The rule should be to *move the forceps in the bladder as little as possible,* never using it as a sound for the purpose of exploring the bladder, or ascertaining the position of the calculus. Such an examination does not assist the surgeon in seizing the calculus afterwards; it gives pain to the patient, excites the bladder to contract and expel the water which had been previously injected; and I know that instances have occurred, though not in my own practice, in which a rough handling of the forceps has caused great injury to the bladder, ending in the death of the patient. The rule for seizing the calculus (which I must acknowledge to have first learned from witnessing the very dexterous operations of M. Heurteloup) is as simple as possible. The patient lying on his back, the handle of the forceps is elevated, which of course brings the convex part of the curved extremity of it in contact with the posterior surface of the bladder, where it is contiguous to the rectum. The forceps is then to be opened, by withdrawing the sliding blade to a greater or less extent, according to the probable size of the calculus, the fixed blade being at the same time pressed gently downwards, in the direction of the rectum. The object of this manipulation is, that the forceps, being below the level of the other parts of the bladder, the calculus may fall into it by its own weight; and it is generally successful.

*

If it should not do so, the forceps, without being moved from its situation, may be gently struck with the hand on one side, or on its anterior part, and the slight concussion thus communicated to the bladder will probably be sufficient to dislodge the calculus, and bring it within the grasp of the instrument. If it should be otherwise, the forceps being closed, may be very gently and cautiously turned to one side or the other, so that the curved extremity of it may make an angle of twenty-five or even thirty degrees with the vertical line of the body, then opened, and pressed in the direction of the rectum in the manner already described.

When the prostate gland is much enlarged, there is sometimes a difficulty in seizing the calculus, arising either from it lying under that part of the gland which projects into the bladder, or from the impediment which it offers to the elevation of the handle of the instrument. For such cases the operating table invented by M. Heurteloup, which enables the patient's shoulders to be suddenly lowered, is very convenient; or the same purpose will be answered sufficiently well if the patient be placed on a light sofa, the end of which may be raised by an assistant. The calculus is then seized, not in that part of the bladder which adjoins the rectum, but in the fundus, this being rendered the lowest point by the elevation of the pelvis.

If the calculus does not at once drop into the blades of the forceps, the patient may be directed to walk round the room, or to change his position as he lies, by turning first on one side and then on the other, the bladder being afterwards emptied by the catheter, and then again injected with tepid water. By these means the calculus is made to change its position, and may often be readily seized, though it could not be so previously.

7. In the early part of my practice, I was accustomed to use a forceps so constructed that a greater or smaller portion of the crushed calculus was always retained between the blades. In this way a considerable quantity of calculous matter may be removed at each operation, and the patient may, to a great extent, be saved from the trouble of passing

it afterwards with the urine. There are, however, some very grave objections to this mode of proceeding. The withdrawing of the forceps, if much loaded with calculous matter, stretches the urethra beyond its natural diameter, and in so doing, not only gives the patient much pain at the time, but renders him liable to rigors afterwards; secondly, in four instances in which I had adopted this practice, the urethra was torn, and an infiltration of urine into the surrounding tissues, followed by urinary abscess, was the consequence. Two of these patients, in whom the mischief produced was deep in the perineum, died, notwithstanding the abscesses having been freely opened as soon as they were detected.

The experience of these cases led me some years since to discontinue the use of the forceps already referred to, or, at least, to have recourse to it very rarely, and only under some special circumstances, and to substitute for it a forceps made by Mr. Weiss, in which there is a longitudinal opening in the curved part of the fixed blade, with a corresponding projection in the opposite or sliding blade. The effect of this instrument is to crush a calculus very completely, and in such a way that no part of it remains between the blades, the whole being left to be passed with the urine afterwards. The ultimate cure of the patient may, in some instances, be thus a little (but not greatly) protracted; but this inconvenience is more than compensated by the smaller amount of pain which the patient suffers, the smaller liability to rigors, and the complete absence of danger from the infiltration of urine and perineal abscess.

8. An important question arises, to what extent may a calculus be crushed at one operation. In the dead body the largest calculus may at once be reduced to atoms. But it would be very unsafe to attempt to do this in the living person; first, the time during which the bladder will retain the water injected into it is limited—and, for the most part, it begins to escape in a few minutes after the introduction of the forceps; secondly, the only part of the operation during which the patient much complains of pain is the

instant of the attempt being made to seize the calculus, the pain then evidently arising from the pressure of the forceps on the neck of the bladder. Now I have observed, that where the crushing of the calculus had been, during one operation, very frequently repeated, more or less inflammation has always followed, extending from the neck of the bladder to the mucous membrane, causing a great mucous secretion, and preventing a repetition of the operation for a considerable time afterwards; and hence I have come to the conclusion that it is a more prudent, and in the end a more expeditious mode of proceeding, to be content, on any one occasion, with crushing the calculus only to a moderate extent. At the same time, it is plain that no general rule can be laid down as to how much can be prudently accomplished. The surgeon must use his own discretion, being guided chiefly by the amount of inconvenience which the patient suffers. In one case, twelve or fifteen fragments may be safely crushed, in another not more than six or seven. The consideration of what has now been mentioned leads me, on the whole, to prefer not putting the patient under the influence of chloroform, as it prevents the patient from describing those sensations, which may help to direct the surgeon in his practice.

9. There is another reason for not being anxious to do all that can possibly be done at any one operation, namely, the greater liability that this occasions of the operation being followed by a rigor. For the same reason, it is important that the urethra should not be stretched beyond its natural diameter, either by the use of very large instruments, or by the withdrawing of the forceps loaded with the fragments of the calculus. It may be necessary in a few cases that a very narrow urethra should be dilated, but this should be gradually accomplished by the introduction of bougies, the operation itself being deferred until the dilatation is completed. In all cases, however, there is more or less risk of the occurrence of a rigor unless due precautions are taken to prevent it. With this view, I always advise that the patient should go to bed afterwards, with an additional blanket over

him, the bed itself being previously warmed in cold weather. I was accustomed formerly to prescribe a dose of the *Pulvis Ipecacuanhæ Compositus,* or some other opiate, to be administered after the operation. For the last few years, however, I have preferred giving the patient a tumbler of hot wine and water, or brandy and water. It seems to me that this is more effectual in preventing a rigor than the opiate, at the same time that it has the advantage of not inducing costiveness or headache afterwards.

I need scarcely add, that it is important on all occasions that nothing should be omitted which may tend to lessen the liability to rigor. Even in the most healthy persons, it is followed by more or less depression of the vital powers, and prolongs the interval which must elapse before the operation can be repeated; while, under certain circumstances, when calculus of the bladder exists, in combination with other disease, it may be actually dangerous to life. I shall have occasion to refer to this subject in reference to the complication of renal disease hereafter.

10. When a calculus has been crushed of so small a size that two or three applications of the screw were sufficient for that purpose, it may be that the fragments will be immediately passed with the urine, so that the bladder may be quite free from them, and the cure of the patient completed in the course of two or three days. When, however, it has been necessary at any one operation to repeat the crushing process several times, for the most part very few of the fragments, and sometimes none at all, are passed during the first three or four days, or it may be even for a week. The explanation of this I apprehend to be, that the pressure of the forceps on the neck of the bladder, which I have already mentioned as the principal inconvenience to the patient at the time of the operation, occasions some degree of inflammation and tumefaction of the prostate gland afterwards, sufficient to prevent the escape of the fragments in the first instance. That nothing may interfere with the neck of the bladder recovering its natural condition, it is desirable that the patient should remain quiet for the first two

or three days on a sofa. Afterwards, with a view to the more free discharge of the fragments, I have generally advised him to walk gently about the house, or even a short distance out of doors, during a part of the day, and to drink plentifully of barley-water or some other diluting liquor. At the same time, all violent exercise, such as rapid walking or running, should be avoided, as it might occasion the urethra to be blocked up by the too rapid escape of the fragments from the bladder. The patient, in some instances, suffers a good deal of inconvenience from a fragment of the calculus being lodged in the urethra, especially in the membranous part of the canal. Various kinds of forceps have been contrived for the purpose of removing the fragments under these circumstances, and I have in two or three instances used them with advantage where a calculus had been lodged in the space between the glans and the scrotum. I cannot say that the forceps may never be required where a fragment is lodged in the posterior part of the urethra, or even that it may not be necessary to extract it by an incision in the perineum. Such a case, however, has not occurred in my own practice. It so happens that I have always succeeded in dislodging the fragment by two or three times introducing a rather small elastic gum catheter, and thus altering the position which it occupied in the urethra. I may take this opportunity of observing, that it is very important to avoid cutting down on the urethra immediately in front of the scrotum. In two instances in which I thus removed a calculus, not after crushing, but where it had been extracted from the bladder entire, by the method proposed formerly by Sir Astley Cooper, notwithstanding the immediate introduction of an elastic gum catheter, and the retention of it in the bladder, a small quantity of urine found its way into the cellular tissue of the penis and scrotum, causing a series of troublesome abscesses afterwards.

In an elderly person, in whom there is usually more or less enlargement of the prostate gland, the fragments do not come away so readily as in those who are younger. This especially happens where the patient has lost the power of

emptying the bladder by his own efforts. It would be a mistake, however, to suppose that the incapability of expelling the whole of the urine prevents them from coming away altogether: still the process is more tedious, and requires some assistance beyond that which is required under ordinary circumstances. Firstly; the patient should be directed to void his urine stooping forward, or even in the recumbent posture, lying with his face downwards. Secondly; tepid water should be injected by means of a syringe, or elastic gum bottle, through a large silver catheter, having a wide aperture near its extremity on the concave side, by which means fragments below a certain size may be washed out of the bladder. This may be done daily, the injection being repeated on each occasion three or four times. In one instance, in which a complete retention of urine followed the crushing of a large calculus, in the course of two or three weeks the whole of the fragments were thus brought away, the patient regaining the power of emptying the bladder afterwards.

11. Where the presence of a calculus has excited inflammation of the mucous membrane of the bladder, indicated by excessive irritability of that organ, and a copious secretion of mucus from its membranous surface, I have generally deemed it prudent to defer the operation for a time, the patient remaining at rest in the recumbent posture until the inflammation has in some degree subsided. This state of things, however, unless the inflammation is excessive, does not form an absolute objection to the operation, though it may be a reason for proceeding more cautiously than if the bladder were in a perfectly healthy state. Indeed it often happens that the first crushing of the calculus, by distributing its weight over a larger surface of the bladder, is followed by a marked improvement of the symptoms, the pain which the patient suffers being immediately diminished, and the mucous secretion reduced in quantity.

In the great majority of instances the crushing of a calculus may be repeated at moderate intervals, without any signs of inflammation, or any very large secretion of mucus

being induced. In other instances it is quite otherwise. This may depend on circumstances altogether beyond our control, some individuals being more and others less susceptible of inflammation. Much, however, depends on the operator. I have already observed that if, from an over anxiety to obtain a speedy cure, the operation on any occasion be much prolonged, the probability of such ill consequences is much increased: and I need scarcely add, that the same result is to be expected from any rough manipulation with the forceps.

12. It has been objected to this mode of removing calculi that there is always a risk of a fragment remaining in the bladder, and causing a recurrence of the disease; and it is quite true that this may well happen without great caution and vigilance on the part of the operator. A single small fragment may escape detection, however carefully the examination of the bladder may be conducted, especially where there is any considerable enlargement of the prostate gland. Still it may be detected at last, and the patient should not be finally dismissed as cured while any of the symptoms of calculus of the bladder remain. It has happened to me, in three different instances, to make more than one most careful examination of the bladder, without discovering a fragment which has at once fallen within the grasp of the forceps, when the examination has been repeated a few weeks afterwards. I may take this opportunity of observing, that where the calculus, or fragment of a calculus, is of a small size, the forceps affords a much more certain means of exploring the bladder than the common sound or catheter, the latter instruments being, in fact, very inefficient for this purpose.

In a case of diseased and sacculated bladder, it is plain that a fragment lodged in one of the sacculi, not only cannot be crushed, but may escape detection altogether. One such case has occurred in my own practice. A gentleman laboured under a calculus of the bladder, complicated with an enlargement of the prostate gland, which prevented his emptying the bladder by his own efforts, and made the

constant introduction of the catheter necessary. The calculus had been crushed, but much irritation of the bladder remained, which I was led to attribute to the disease of the prostate gland. After some months the patient died, and the body was examined by Mr. Bowling, of Hammersmith, who found the prostate gland much enlarged; abscesses in the kidneys; a fasciculated and sacculated bladder, and a fragment of the calculus impacted in one of the sacculi.

13. There is some difference in the operation in different cases, depending on the chemical composition of the calculus. A calculus composed of oxalate of lime requires a greater force to crush it than one of the same size composed of lithic acid. It is important that one of the former kind should be crushed as completely as possible, as otherwise the urethra is liable to be irritated by the sharp angles presented on the surface. A calculus composed of the triple phosphate, or of the mixed phosphates, or more especially of the pure phosphate of lime, is more easily crushed than one of lithic acid; so that if of a small size the mere pressure of the thumb will often be sufficient, without the application of the screw. When there is disease of the bladder, with a constant exudation of adhesive alkaline mucus from the lining membrane, phosphate of lime is continually being deposited in small masses like a soft mortar, which, if allowed to remain become aggregated, and form the nucleus of a large calculus. It is important that such a result should, if possible, be prevented. I have elsewhere published an account of a case of this description,[1] in which a very large accumulation of deposits of this soft phosphate of lime had taken place, causing great suffering to the patient, but which I was enabled to remove by means of a forceps having the fixed blade made concave, so as to answer the purpose of a scoop, without the use of the screw; the bladder being regularly washed out afterwards to prevent any further accumulation from taking place.

14. That which I have just mentioned belongs to a class

[1] 'Lectures on the Diseases of the Urinary Organs,' 4th edition, p. 301.

of cases in which a cure of the disease is out of the question; and in which the operation of lithotomy would be attended with so much danger that no prudent surgeon would undertake it; but in which, nevertheless, great advantage may be obtained by the use of the lithotrity forceps. In the cases to which I refer there is a permanent and incurable disease of the bladder, induced originally by a tumour of the prostate gland projecting into it, or in some other way, the calculous matter being deposited, not by the urine, but by the secretion of the mucous membrane. When collected in a certain quantity, by irritating an inflamed and highly sensitive organ, it becomes a source of most intense suffering far beyond what occurs in ordinary cases of calculous disease. We have, for the most part, no means at our disposal, by which, in such cases, the deposit of the phosphate of lime can be altogether arrested: but, by watching the patient carefully, and removing from time to time the small calculi as they are generated, the sufferings which they would otherwise produce may be mitigated or prevented. Two or three such cases have occurred in my own practice, in which I was enabled, not ultimately to preserve, but to lengthen, the patient's life, and so that he passed the remainder of his days not in a state of absolute ease and comfort, but with a far less amount of suffering than would have been the case otherwise.

15. It is not uncommon for the operation to be productive of a slight hemorrhage, sufficient to discolour the water drawn off from the bladder, or even the urine, for two or three days afterwards. The blood seems to proceed from the neck of the bladder, and probably arises from the pressure made by the forceps on the prostate gland in the act of seizing the calculus. I have never, in my own practice, met with hemorrhage to any considerable extent, or such as to interfere with the progress of the cure. It is plain, however, that in a case of enlarged and very vascular prostate gland a greater hemorrhage might occur under the most careful treatment: otherwise its occurrence must be regarded as evidence of the forceps having been too roughly used,

without that degree of caution and lightness of hand which I have already mentioned as being absolutely necessary to the success of the operation.

16. The advantages of lithotrity are certainly most conspicuous in cases of small calculi, where a cure may be effected by one or two operations, so that the patient, in the course of four or five days, finds himself free from the pain and anxiety belonging to a most formidable disease, and able to resume his usual occupation. There are undoubtedly cases in which the magnitude of the calculus is such that it would be impossible to seize it with the lithotrity forceps, or to crush it if seized, and in which the patient is reduced to the alternative of a miserable death from the disease, or of taking the very small chance, which, under such circumstances, lithotomy affords him of a cure. Such cases, however, are, according to my experience, rare exceptions to the general rule; calculi of very considerable dimensions may be crushed with ease and safety. I have, in some instances, when the calculus was seized, found that the blades of the forceps have been separated to the extent of an inch and a half, yet have found no difficulty in the operation, nor any other inconvenience than that of having to repeat it oftener than when the calculus was of smaller diameter. In the year 1844, in a case which the late Mr. Aston Key attended with me in consultation, from the length of time during which the symptoms had existed, and from such examination as we were able to make, we were led to apprehend that the calculus might be of so large a size that crushing it would be impracticable. However, we determined that the operation should be attempted. I had a forceps made for the purpose, larger and of greater power than those which I had previously used, and we were agreeably disappointed to find that it yielded at once to the force which I was thus able to apply, the fragments being afterwards gradually reduced by means of the ordinary instruments.

It must be observed, however, that where we have recourse to this operation it is difficult to determine the exact size of the calculus. We have no means of knowing whether it be

seized in its longest or in its shortest diameter. The fragments which come away may be preserved and weighed, but these are no measure of what is actually destroyed, as many of the smaller fragments may be entangled and lost in the mucus, and so much of the calculus (especially where it consists of the phosphatic salts) is always reduced to a state of impalpable powder, which renders the urine opaque, but is otherwise imperceptible to the eye, though it may be detected by chemical analysis.

§ 2.

Having made these observations as to the points which principally demand the attention of the surgeon, in connection with the operation of lithotrity, and having offered those suggestions which, according to my experience, are most important with a view to its favorable termination, I shall endeavour to communicate to the Society, as nearly as I can, an exact account of the actual results of my own practice. In doing so it will be my especial object to describe, however briefly, the cases in which the operation, in my hands, has proved to be unsuccessful, and the causes which have led to its failure. I have the means of doing this with sufficient accuracy, as I have the advantage of referring not only to my own notes, but to those of my friend and former pupil Mr. Charles Hawkins, who has assisted me for many years past in the great majority of cases which have come under my care, and has preserved notes of every one of them.

From these two sources I obtain an account of 111 cases. There are a few others of which I have no written memoranda; and these being scattered over a period of twenty years, I cannot charge my memory with an accurate recollection of them. They are probably as many as nine or ten; but that I may not incur the risk of magnifying the extent of my experience, I will set down the whole number of cases under my care as being no more than 115. I am aware that this is a small number compared with those which have been treated by my friend M. Civiale, and some

other surgeons in Paris, who devote themselves especially to this branch of our profession. It is, however, I apprehend, quite sufficient to enable any one who is a careful observer to make himself acquainted with all the more important points of practice.

When I speak of having performed the operation in 115 different cases, I do not mean to say that these occurred in the same number of individuals. One great advantage which this operation has over that of lithotomy, is that, being less formidable to the patient, he is not unwilling to undergo it again and again if there should be such a liability to calculous disease as to render it necessary. There was a gentleman whom I attended, in conjunction with the late Dr. Prout, in whom the tendency to the deposit of lithic acid was so great that none of the methods commonly in use, nor any others which we were able to devise, had any sensible influence over it. Originally the deposit had been in the form of lithate of ammonia, the surface of the vessel being always stained of a red colour. Afterwards it assumed that of renal calculi. Several of these were voided from time to time, while others, being of greater magnitude, remained in the bladder, and required to be crushed. The operation was performed on this patient as many as eight times in the course of the same number of years, always with complete success. He died at last the victim of cerebral disease;—a not uncommon termination of those cases in which there is so great and uncontrollable a disposition to the production of lithic acid in the blood. In another patient, who was also under the joint care of Dr. Prout and myself, there was a similar liability to the formation of renal calculi; but they were generally of a small size. I removed at various times, probably more than one hundred calculi of the size of hemp-seeds, by means of the scoop-forceps; but on two or three occasions, the calculi being of a larger size, it was necessary to crush them. In three other cases I had to perform the operation a second time. It is to be observed that I refer here to cases in which there could be no doubt that the calculi were altogether fresh formations, and that I carefully exclude the

very few instances that have occurred to me, in which a recurrence of the symptoms might be reasonably attributed to some fragment or fragments having been overlooked in the first instance.

It would be needless to enter into the details of the very large majority of cases which have been under my care, the patients having obtained complete and permanent relief without any dangerous symptoms or other ill consequences. Those which form an exception to this general rule, may be distributed under the following heads:

First. Cases in which there was a fatal result, arising solely from the operation itself.

Secondly. Cases in which a similar result was to be attributed to the coexistence of some other disease, brought into an active state by the shock of the operation, but which disease would in itself have been sooner or later the cause of death, even if the operation had not been performed.

The cases which belong to the first of these divisions are five in number.

I have already referred to four cases, which occurred in the early part of my practice, in which the urethra had been lacerated in withdrawing the forceps loaded with calculous matter. In two of these the patients died.

In one of them, urinous effusion took place behind the triangular ligament of the perineum, causing extensive sloughing of the cellular membrane in the immediate vicinity of the prostate gland and neck of the bladder.

In another case, the effusion took place in the perineum behind the scrotum. As soon as it was discovered the perineum was freely divided; but great constitutional disturbance followed, attended with acute inflammation of the lining membrane of the bladder, and an immense secretion of adhesive mucus, under which the patient sank and died.

In a third case, a calculus of very moderate size was crushed without the smallest difficulty. The operation was followed by a rigor, which, not being relieved, as is usual, by a perspiration, terminated in an attack of fever, and

ultimately in the patient's death. There were no local symptoms whatever; the bladder being free from irritation; the urine remaining acid, free from mucus and pus, and there being no indication of renal disease. It certainly may have been otherwise, but it seems to me that the circumstances are best explained by supposing that the febrile disturbance of the system, of which the rigor was the precursor, was the actual cause of death. Unfortunately, the objections of the patient's friends to a *post-mortem* examination, prevented my having the opportunity of obtaining any positive information on the subject.

In a fourth case, a very small calculus was crushed with great ease by a single operation. The operation was succeeded by a rigor, which terminated, as is usual, in a perspiration. A disturbed state of the system followed, marked by a frequent pulse, a furred tongue, and much prostration of strength; and attended with a deposit of adhesive mucus, but not in large quantity, from the urine. These symptoms continued, and after some time an abscess presented itself in one groin. The abscess having been opened, a considerable discharge of matter took place, and was followed by great relief as to the general symptoms. The patient seemed to be in an improving state, when, between four and five weeks after the operation, he suddenly expired.

On examining the body, no remains of the calculus were discovered in the bladder. The mucous membrane of the bladder bore marks of inflammation. There was an abscess of the pelvis occupying the space between the bladder and rectum, and extending in the direction of the abdomen as high as the groin, in which the puncture had been made. The parts were carefully dissected and examined by the late Mr. Vincent (who had attended the patient with me in consultation), by Mr. Charles Hawkins, the Curator of the Museum of St. George's Hospital, and myself, but no lesion could be detected of the bladder, nor any kind of communication between the bladder or urethra, and the abscess. Still I cannot doubt that the abscess was somehow the result of the operation. Probably a very small splinter of the calculus

might have penetrated the coats of the bladder, allowing the escape of a very minute quantity of urine into the cellular membrane. This would be quite sufficient to account for an extensive suppuration, at the same time that it is easy to suppose that so small a puncture might at once have closed, so as to be invisible afterwards.

The fifth case was that of an elderly gentleman, in whom, after a calculus had been twice or three times crushed, inflammation of the mucous membrane of the bladder ensued, attended with little pain, but with a very large secretion of mucus, and great prostration of his bodily powers, under which he gradually sank and died.

In the three cases which follow, there seems to be no reason to doubt that the fatal result, though it immediately followed the operation, is more to be attributed to the existence of renal disease than to anything in the operation itself. Still, as in each of them the patient might have lived longer if it had not been had recourse to, we must admit them as examples of the operation being unsuccessful.

In one of these cases the patient, though apparently in good health otherwise, had been for some time liable to attacks of severe pain in the loins. A calculus, of a moderate size, was crushed without any difficulty, some of the fragments being withdrawn with the forceps afterwards. The operation was followed by a rigor. On the following day there was an attack of most intense agonizing pain in the loins, attended with a very frequent pulse, which lasted for several hours, and could be relieved only by opium. Several attacks of the same kind succeeded each other at various intervals, one of them being ushered in by another severe rigor. At first, on the pain subsiding, the pulse returned to its natural standard; afterwards there was no remission of the febrile symptoms; the patient was alternately drowsy and delirious. He gradually sank, and died twelve days after the operation.

The body was examined, with the assistance of Mr. Henry James Johnson, who attended the patient with me.

Some fragments of the calculus which had been crushed,

with three or four other calculi of a small size, were found in the bladder. The bladder and urethra, and parts immediately in connection with these, were in a perfectly healthy state.

The left kidney was enlarged to nearly double its natural size, and of a dark red colour, from excessive vascularity. The investing membrane adhered more closely to the surrounding adeps than to the kidney itself. When it had been removed, numerous small deposits of straw-coloured lymph were found interposed between it and the glandular structure. The mucous membrane of the pelvis and infundibula was inflamed, and contained a considerable quantity of muco-purulent fluid. There was no disease of the right kidney.

Another case was that of a gentleman who, besides the usual symptoms of calculus of the bladder, suffered from the effects of an enlargement of the prostate gland, which prevented him from being able to empty the bladder by his own efforts. The urine, when drawn off by the catheter, was turbid, and deposited some mucus afterwards.

After the first crushiug of the calculus the patient had a rigor, which, however, was followed by no ill consequence. The bladder was emptied at regular intervals by means of a catheter having a large aperture, at the same time being washed out daily with tepid water. In this manner a large quantity of the broken down calculus, consisting of the mixed phosphates, was brought away.

The operation was not repeated until after the expiration of a fortnight. It was again followed by a rigor, and by another on the succeeding day. From the effects of this last rigor the patient never recovered; and he died on the third day after the second operation.

On examining the body after death, the prostate gland was found enlarged, and forming a tumour, projecting into the bladder, of the size of an ordinary plum.

The mucous membrane was rather more vascular than under ordinary circumstances, and the muscular tunic was somewhat increased in thickness, but not more so than in

most other cases of enlargement of the prostate gland. In other respects the bladder and urethra were in a sound state.

The kidneys were of a dark red colour, from excessive vascularity; and, on separating the investing membrane, numerous small deposits of pus were found beneath it imbedded in the glandular structure.

In the following case, as long a period as six weeks elapsed between the last operation and the death of the patient; nevertheless, I cannot do otherwise than refer it to the same class as the two preceding; as, although, he laboured under a disease from which he could not have ultimately recovered, we must suppose that the fatal termination of it was hastened by the operation.

The patient was under my care in St. George's Hospital, labouring under calculus of the bladder, complicated with general ill health, but at first having no symptoms indicating any immediate danger. The calculus was crushed by five operations, at intervals varying from five to thirteen days. During this process he had several severe rigors. From the time of the last operation he was free from pain, but the urine was alkaline, depositing a good deal of adhesive mucus, with great general debility, increasing until he died.

On examining the body, one kidney was found to be enlarged to double its natural size, with numerous abscesses, from the size of a pin's head to that of a pea, imbedded in the glandular structure. The mucous membrane of the pelvis and infundibula bore marks of inflammation, and was encrusted with phosphate of lime. The opposite kidney exhibited similar marks of disease, but to a less extent. The prostate gland was a good deal enlarged; the mucous membrane of the bladder was inflamed, and the muscular tunic thickened.

As it is my wish to give an exact account of the results of my own practice, I shall add to this list of casualties a notice of another case in which the death of the patient took place shortly after the operation; but under circum-

stances which make it at the least very doubtful whether the operation had in any way contributed to it. The patient was an elderly gentleman, and the calculus was of a large size. It was crushed without any difficulty, but several operations were required, occupying altogether a period of three or four weeks. No unfavorable symptoms presented themselves, except that the patient, who was naturally of what is called a nervous temperament, was on the whole in a desponding state of mind, taking an unfavorable view of his own condition. However, he seemed to have perfectly recovered, and had begun to resume his usual habits, when he was seized with a severe attack of diarrhœa, which did not yield to the usual treatment, and after a few days proved fatal.

Mr. Keate had seen the patient with me in consultation, and Mr. Charles H. Johnson had assisted me in the various operations, and in my absence from London, they examined the body without finding any morbid appearance except that one kidney was somewhat larger and more vascular than under ordinary circumstances.

I am not aware that among the cases which have been under my care, there have been any besides those which have been now enumerated, in which the operation can be considered as having either caused or accelerated the patient's death. In by far the greater number of instances the entire destruction of the calculus is immediately followed by relief from all the former symptoms, the bladder being no longer irritable, and the urine being free from mucus. It occasionally happens, however, that after the cure is completed, or supposed to be completed, the mucous membrane of the bladder remains in a more or less inflamed state, indicated by a frequent desire to void the urine, and a deposit from the latter of adhesive mucus. This may arise from a fragment of the calculus having been overlooked, in which case the symptoms will continue until such fragment has been detected and crushed. It may arise also from the calculous disease having been complicated with disease

of the prostate gland, or of the bladder itself; and it is, moreover, one of the numerous ill consequences of a too rough manipulation on the part of the surgeon, or too long protracted operations. The symptoms here referred to, if merely the result of the operation, generally subside in the course of a fortnight, with little other treatment than that of keeping the patient in a state of repose, and chiefly in a recumbent position on a sofa.

§ 3.

It would be unreasonable to expect that any method of treatment for the relief of a disease so certainly fatal if left to itself, and productive of so much misery, as calculus of the bladder, should be constantly and uniformly successful. If lithotomy has its dangers, lithotrity has its dangers also; and the only question for the practical surgeon to consider, is, which is the least dangerous of the two. Of the nine cases which I have enumerated it may well be doubted as to one of them whether the attack which was the immediate cause of the patient's death was really connected with the operation; while in two others, the fatal result was to be attributed to a mode of performing the operation which my later experience has led me to abandon. But, even if we admit the whole nine cases as a fair example of the average failure of the operation, the proportion of deaths to recoveries is somewhat less than 1 in $12\frac{1}{2}$.

In order that I might compare this with the proportion of deaths from lithotomy, I have referred to a paper by the late Mr. R. Smith, of Bristol, published in the Eleventh volume of the 'Transactions' of this Society, and entitled '*An Inquiry into the Statistics of Stone in the Bladder,*' and I there find it stated, that in the Bristol hospital, during a series of many years, the average of deaths after lithotomy was 1 in $4\frac{1}{2}$; in the hospital at Leeds, 1 in 5; and in the hospital at Norwich, 1 in $7\frac{1}{4}$.

Thirty-five years have elapsed since the publication of these statements, but there is no reason to believe that the

success of lithotomy is greater now than it was when Mr. Smith collected his observations. The editor of a weekly journal (the 'Medical Times and Gazette'), has for some time past published the statistics of the various operations performed in the London hospitals, including lithotomy. The facts seem to have been collected with some care, and are probably a near approximation to the truth. Mr. Charles Hawkins has been at the pains to collect from the various numbers of that journal published during the year 1854, the facts relating to lithotomy, and it appears that of 59 patients who underwent that operation as many as 10 died, being in the proportion of rather more than 1 in 6.

But here two other facts must not be overlooked, without which no just comparison can be made of the results of the two operations. First, while cases of vesical calculus in children under the age of puberty, in private practice, and among the more affluent classes of society are of rare occurrence, they form the very great majority of those which are admitted into hospitals; and, secondly, the proportion of deaths after lithotomy among children is very much less than it is among adults. Both these facts are sufficiently obvious to those who have had the opportunity of witnessing the practice of our larger hospitals. From the data furnished by the medical journal to which I have already referred, it appears that in the London hospitals during the last year children formed a small fraction more than three fourths of the whole number of those who underwent lithotomy; that among them the deaths were in the proportion of 1 to 14 recoveries; while among adults the deaths and recoveries were equal. That in this instance the large proportion of deaths among adults was beyond the average, and depending on accidental circumstances, cannot well be a matter of doubt, and indeed it is plain that no general rule can be drawn from the limited number of cases which occur in the space of a single year. Still, as even in the Norwich hospital, where there is reason to believe that lithotomy has been on the whole more successful than in any other public institution, the proportion of deaths among adults is reported

to have been four times as large as that among children[1] it is evident that the difference in the degree of danger at these two periods of life is very great; and it must always be borne in mind that, in estimating the comparative value of the two operations, it is only the results met with in adults that should enter into our calculations.

My own experience has certainly led me to the conclusion, that lithotrity, *if prudently and carefully performed, with a due attention to minute circumstances,* is liable to a smaller objection than almost any other of the capital operations of surgery. The cases to which it is not applicable are very few indeed, and they are chiefly those in which, from the calculus having attained an unusual size, the danger and difficulty of lithotomy are so great, that no surgeon would willingly, nor otherwise than as a matter of duty, undertake it.

[1] 'Medico-Chirurgical Transactions,' vol. xi, p. 32.

OBSERVATIONS RESPECTING

DEGENERATION OF THE PANCREAS.

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THE structure of the pancreas is so well known, that it would be merely tedious if I were to commence this paper with any detailed account of it. I may state that my own observations agree in the main with those of Dr. Hyde Salter, whose essay, in the 'Cyclopædia of Anatomy and Physiology' (part xliv) contains the best description I am acquainted with. I am, however, surprised that he should be unable to "detect nuclei" in the epithelial particles. In some they are indeed either obscured by the granular contents, or have vanished as the cell attained its mature condition; but in the majority, they are plainly visible, and are sometimes double. Moreover, great numbers may always be found floating about free in the water in which the specimen is immersed, mingled with granulous substance. I incline very much to the opinion, that an absence of cells, or a great paucity of their number, is to be regarded, in some cases at least, as an abnormal condition. I doubt whether the epithelium can be considered quite healthy, when it consists solely or chiefly of nuclei mingled with granular and

oily matter. Still I would not express myself too confidently on this point, as I have found, in the case of birds' livers, that no cells or celloid particles existed in specimens which appeared absolutely healthy. Neither does there appear to be any improbability in the idea that granular matter, lying in contact with a nucleus, may be employed in the secretory act, although it is not inclosed in a cell-membrane. Indeed, it has always appeared to me to be a character of glandular epithelium, that its cells are mingled with free nuclei and granular matter in varying proportions. In the kidneys, the salivary and gastric glands, this is very positively the case, and to a less degree in the liver. I hesitate, therefore, to affirm what amount of deviation from the healthy type is implied by an absence or scanty and low development of cells. Perhaps, as long as the same relative amounts of nuclei, granular, and oily matter, are present, there may be no impairment of functional power. The more we study varieties of organized tissue, the more we become convinced that vital endowments are not absolutely linked to certain definite structural features. Who shall assert what shape or form of matter is necessary for the possession of contractility?

Degeneration of the pancreas, of such a kind as might be termed fatty, is the most striking morbid change which I have met with. It has been observed also by Dr. H. Salter, whose description of the change, so far as it extends, I can confirm. The following details of the examination of Case 17 in the table, will convey a good idea of the condition of the gland in an advanced stage of this form of wasting. The glandular vesicles or ultimate cavities are entirely destroyed, no trace of limitary membrane is to be seen; the whole tissue is reduced to a coarsely lobulated mass, which contains a large quantity of oily matter. The epithelium consists of mere shadowy traces of nuclei, with the smallest amount of faint, dim, amorphous matter, containing much oil in a finely divided state. The nuclei do not show a well-marked contour, like normal ones, nor have they refracting contents, nor nucleoli. Sometimes, as Dr. Salter states, there are abso-

lutely no nuclei or cells, nothing but amorphous and oily matter. A gland thus degenerated is of a dirty yellowish colour, soft, lax, and flabby, and often exhibits some whity spots upon its surface, which consist of groups of fat-cells. Similar groups are also present in the interior of the gland, but it is very clear that the wasting process is quite independent of their formation. In Case 30, these groups were numerous, although the glandular tissue in itself was sound. The atrophic state, described by Rokitansky as depending on excessive accumulation of fat, bears evidently the same relation to the one above noticed, as the atrophy of the heart from fatty encroachment does to the true degeneration affecting its muscular fibre.

An example of degeneration in an earlier stage is afforded by Case 19. The pancreas was of firm consistence, and yellow opaque colour. The glandular cavities were scarcely to be seen, except in a few spots, but the epithelial masses retained not unfrequently the shape of the vesicles in which they had been lodged. The epithelium consisted chiefly of nuclei, the cell-particles being wasted or stunted; it contained also much oily matter, and appeared itself to be more abundant than usual. The limitary membrane was destroyed, in great part at least. The tissue was very opaque, little altered by acetic acid. Solution of carbonate of soda dissolved the epithelium (nuclei and granular matter), leaving only the oily molecules abundantly diffused through a translucent mass. I came to the conclusion that the morbid process consisted in a gradual *déperissement* of the limitary membrane, the epithelium accumulating and decaying into an oily mass.

In some specimens, it has appeared to me that the number of nuclei was excessive in proportion to the amount of granular matter, whether this were contained in cells or free. This certainly appears to be an abnormal state, because it is tolerably certain that the granular matter of glandular epithelium is the substance by means of which secretion is effected, whether the secerning act consist in an actual conversion of the granular matter into the product, or in a

filtration through the epithelial layer; or in a resorption of the latter in exchange for the secretion. A true gland having the power of preparing a special secretion, in proportion as this abnormal change took place, would approximate to the condition of the thymus, the spleen, or the Peyerian and solitary glands, which, though chiefly made up of myriads of nuclei, yet form no product that differs very notably from the nutrient blood-plasma.

There is yet another condition of the pancreas which I am inclined to consider morbid, and which is briefly noticed in the 'Manual of Pathology,' p. 576, and in my 'Essay on Fibroid and Allied Degenerations.' In this the gland appears large, of a whity gray pale aspect, and bloodless; its lobular arrangement is well marked, and the lobules are prominent, with intervening depressions. The tissue is firm, and its feel suggests the idea of its cavities being tensely filled. In a specimen I recently examined, the smaller end of the gland was remarkably enlarged, so as to equal almost the size of the right extremity. There is nothing very noticeable microscopically in the condition of the epithelium, it may appear rather stunted, and contain a good deal of oily matter. Although it is difficult, by means of the microscope, to determine whether or not the quantity of epithelium is excessive, yet naked eye observation, in conjunction with our knowledge of the structure of the organ, enables us to feel a certainty that the enlargement of the gland must be owing to an abnormal increase of the epithelial contents of its ultimate cavities. Now, in some cases (I will not venture to say in all) this epithelial accumulation and distension must be morbid, and coincide with impairment of function. For if, as is most probable in the healthy state, the epithelium liquefies and produces the secretion, it is clear that its accumulating so as to distend the gland-cavities must be an exponent of the circumstance that it is not undergoing the normal and necessary change. Such accumulation of the epithelium is met with also in other glands, and constitutes the essence of some morbid states well known to pathologists. Thus, the enlarged pale or mottled kidney is found to have

its tubes more or less distended and obstructed by a bulky granular epithelial growth. The mammary gland is liable to have one or more of its lobules distended in the same way, constituting the chronic mammary tumour. Even the common sebaceous cysts of the scalp seem to be of the same family, as they are sometimes lined with thick layers of accumulated epithelium, or contain the same mingled with their fatty secretion. Cystic sarcoma of the testis, in its non-malignant variety, probably belongs to the same class. All these instances have this circumstance in common, viz., the abnormal increase of the epithelial contents of gland-cavities, with impairment of their secretory action.

Of the thirty cases recorded in the table, there are nine in which the pancreas was found to be considerably degenerated, (Nos. 1, 4, 6, 13, 15, 16, 17, 25, 26.) Five were less diseased, but appeared to be in a somewhat similar state, or in an earlier stage, (Nos. 2, 8, 9, 19, 30.) In three there were some peculiar alterations, which shall be specially noticed, (Nos. 7, 12, 29.) The thirteen remaining were healthy, or nearly so. I propose to examine the data afforded by the table with respect to the two first groups.

The *ages* of the cases constituting the first group vary from 25 to 87, the mean is 45, or, if the two extreme instances be excluded, it is 41·5. Pancreatic degeneration does not, therefore, seem to be specially incidental to advanced age, but rather to affect middle life.

Sex does not seem to have much influence in the causation of degeneration of the pancreas. Of the nine seriously diseased cases, five were females, and four males. This certainly shows an excess on the side of the female sex, especially when it is observed that out of the thirty there are nineteen males to eleven females.

As to *coexisting morbid conditions*, whether immediately concerned or not in producing the fatal event:—In one case there was cancer uteri; in four, there was granular degeneration of the kidneys, associated three times with cirrhotic disease of the liver, more or less marked; in one case all the

other organs were healthy except the liver, which was in that state termed by Rokitansky, "acute yellow atrophy." In another, even at the advanced age of 87, there was no other notable organic change except enlargement of the heart, and emphysema of the lungs. In a third, who had long been in the habit of tippling moderately, who had suffered from rheumatism, and who had occasional attacks of delirium tremens, the organs were fairly healthy, except the heart, which was very flabby, but not fattily degenerated to any extent. The body in this last case was more than usually fat; in one of the cases with diseased kidney and dropsy, there was extreme emaciation. In a case of fever with double pneumonia, where the degeneration was extreme, the organs were all healthy, but the patient was said to have been subject some years to epilepsy.

From these facts it seems to result that there is no special morbid state at all intimately associated with pancreatic degeneration, but that some indication or other will be found to exist of impaired vital power. Cancer, renal disease, old age, the habit of spirit-drinking, may all be exponents or causes of the decay. In the last case of advanced degeneration that I have examined, death occurred from exhaustion, consequent on long-continued and very severe functional disorder of the stomach. There was a notable amount of tubercular deposit in the lungs, a fatty state of the liver, a good deal of degenerative disease of the mucous membrane of the stomach, and very great emaciation. Excluding this case, which does not belong to the table, it is rather remarkable that scrofulous disease did not occur in any of the cases of degenerated pancreas, while it was present in four of those in which the gland was healthy.

The condition of the mid-region of the stomach, and of the duodenum, was microscopically examined in all the series. The former was found healthy in six cases out of the nine degenerated, and the latter in seven. There seems, therefore, to be no corelation between disease of the pancreas and of the duodenum, nor, as far as the evidence goes, between the former and gastric disease. This is confirmed

by the result that among thirteen cases of healthy pancreas there were three in which the stomach, and three in which the duodenum, were diseased; the proportion in both groups being nearly similar.

No symptoms, as far as I have observed, give any intimation of the existence of even the most advanced pancreatic degeneration. The fæces, it is possible, may present some peculiarity, but I have not attempted to examine them. It seems scarcely conceivable that a gland so utterly degraded from its healthy condition could prepare a healthy secretion, but the want of this may be in part supplemented by the glands of Brunner, which have generally appeared to me to be fairly sound. The intestinal secretion, also, has, as ascertained by Bidder and Schmidt, the power of converting starch into sugar, as the pancreatic fluid does, so that the non-digestion of starchy matters would be no necessary result of the destruction of the pancreas.

Of the five cases moderately degenerated, the ages vary from 36 to 57; the average is 47·4, a higher figure than where the degeneration was more advanced. One only among them was a female. There is nothing particular observable in this group with respect to coexisting morbid conditions, except that in Case 9, where death took place after an attack of hemiplegia, connected apparently with hypertrophy of the heart, the patient having been a great drunkard up to the time of his death, the pancreas was the only glandular organ found diseased. The follicles were not destroyed, but the epithelium was very wasted and fatty. The epithelium of the stomach-tubes in the mid-region was also wasted; and the duodenum was the seat of nuclear and granular infiltration. Perhaps these changes were connected with the pernicious habit in which the patient indulged.

Of the three cases in which peculiar alterations of the pancreas were found, one (No. 12) appeared to be in somewhat the same state as No. 19, of which details have already been given. The basement membrane of the glandular cavities, though not destroyed, was less distinct than usual; it was, however, brought more plainly into view by the

action of dilute acetic acid or alkali. The epithelium was very abundant, consisting of numerous nuclei and small celloid particles, and contained a great deal of oil, in the form of molecules and drops. There did not appear to be any interstitial formation except some fat. The gland appeared healthy to the eye, and so did the other organs for the most part, except the kidneys, which were large, probably abnormally so, and showed traces of commencing granular degeneration. I regard the condition as an instance of an early stage of atrophic change.

In No. 7, there was encephaloid disease of the liver, which had involved the right half of the pancreas and the duodenum; the left extremity of the gland was free, but indurated and yellowish, it was not attached to any of the surrounding parts. The glandular cavities were very indistinct, they were partly obscured by an interstitial granulo-homogeneous substance, partly, and more in some places than in others, broken down. Their epithelial contents were very fatty, but the nuclei were very distinct, and pretty numerous. The fatty matter had the appearance of being concrete and solid, and lay imbedded in a material which was rather homogeneous than granular. The minute ducts were occasionally seen, appearing rather wasted, but their epithelial particles still distinct. The conclusion I came to was that this part of the gland had not been affected directly by the cancerous growth, but had been irritated by it, and become penetrated by fibrinous exudation. Rokitansky mentions a similar condition as the result of chronic inflammation. It is worth remark, that while the kidneys were for the most part healthy, the lower end of the right was much indurated, perhaps from the same cause as the pancreas.

In No. 29, death occurred chiefly as the result of cirrhosis of the liver and ascites, there was scarce any other organic alteration except in the pancreas. This gland was peculiarly firm, hard, dense, and presented little of its usual lobulated aspect on the surface, though it was very apparent in the interior, but a number of dead whity spots, which proved to

be disintegrating fat-masses. There was no unusual amount of interlobular fibrous tissue, but the layer on the surface was, I think, denser and closer than natural. When examined in water, the limitary membrane of the gland-cavities was not so evident as it should be, but it was brought into view more distinctly by solution of carbonate of soda. The epithelium, seen in water, was abundant, its nuclei were very numerous indeed, and well formed, but they were mingled with less granular matter than normally, and some showed a decided tendency to develop short fibres. Very few celloid particles were present, and those which were seen were small. The epithelium often formed masses which, examined carefully by a good daylight, with a one-eighth inch glass, were seen to be made up of perfect nuclei, with an homogeneous dim uniting substance imbedding small oil-drops. Traces of cell-membranes were seen surrounding some of the nuclei. The firmness and density of the pancreas in this case, I incline to think, depended chiefly upon the condition of the gland-tissue itself. It is quite possible (as indeed occurred in this very instance) that a great degree of contraction of the liver may be produced by a small amount of fibroid material; the Glissonian sheaths not being thickened to any great extent. In the same way the interstitial fibrous tissue of the pancreatic lobules might have caused induration by its contraction without appearing to be notably increased in quantity; but, as I have said, I think the other view more probable. Analogy would lead us, no doubt, to consider the externally similar alterations as completely identical, but I think it unsafe to follow this guide too closely. Pathological processes, though having a general and obvious resemblance to each other, may differ considerably in their more recondite particulars. Thus, I believe the cirrhosis of the liver in this instance to have consisted in an alteration of Glisson's capsule and its offsets; that of the pancreas in an alteration of the epithelium of the gland-cavities. Both, however, had probably some common causative condition, which operated differently in the different organs.

I conclude this paper with the following remarks:

1. Degenerative disease is evidently of great frequency, and this fact should never be absent from the mind of the practitioner. In fatty degeneration of the heart, in general emphysema of the lung, in Bright's disease of the kidneys, in various morbid conditions of the liver, in wasting of the gastric mucous membrane, and that of the pancreas as now described, we have continual instances of it.

2. Degeneration presents two chief varieties;—in one, there is simple decay and atrophy of the elements of the tissue, the débris of which are found to be more or less loaded with oil. This is the common fatty degeneration as seen in the heart's fibres, the arterial coats, the liver, the pancreas, the contracted kidney, the cornea (*arcus senilis*), and the opaque white cataractous lens;—in the other, coincident with or causative of the organ's decay, there is an interstitial growth of nucleated fibroid tissue. Of this examples are seen in hepatic cirrhosis, in analogous affections of the testis, in nuclear infiltration of the gastric mucous membrane and fibroid thickening of its muscular and other coats, in Corrigan's pulmonary cirrhosis, and probably in the so-called hypertrophy of the brain. The homologous condition in the kidney is rare, but is sometimes met with. Much more commonly, however, the exudation in the kidney is not interstitial, but drains off from the Malpighian tufts forming casts of the tubes, and at the same time proceeding from the interwoven plexus, distends the tubes by the formation of a bulky, often fatty epithelium. Thus is produced the large mottled kidney, which seems to become hypertrophied much in the same way as a scrofulous lymphatic gland, viz. by a quantity of fibro-albuminous matter being organized into low celloid forms. Pulpy degeneration of the synovial membrane of joints seems to belong to the second variety of degeneration, as the cartilage and the synovial membrane are gradually wasted away by the encroachment of the new-formed material, whose constitution is essentially the same as that of nucleated fibroid tissue in other parts. The lowest form which the second variety of degeneration presents

is that where the exudation appears as a completely unorganized material, the so-called "bacony matter," accumulated interstitially among the proper elements of an organ, which at the same time waste and decay. This variety of exudation is found in those who suffer under severe cachexiæ.

3. In the first form of degeneration hyperæmia has no concern. In the second it may be a predisposing, or promoting cause, but is not the essential. The two great factors of degeneration, as of healthy nutrition, are the state of the plasma, and that of the organizing force, that mysterious power which originally built up the frame out of albumen, fat, and salts, and still maintains its integrity against counterworking influences. The first form of degeneration shows a simple defect and failure of the organizing force. The second, shows a perversion of it, which gradually shades off into those morbid potencies capable of producing fibrous, fatty, sarcomatous, or cancerous tumours.

No.	Name.	Age.	Sex.	History of Illness.	Post-mortem Examination.	State of Stomach, Duodenum, Pancreas.
1	Prisc. P.	34	F. m.	Ill 1 year, admitted almost moribund. Spontaneous fracture of the right femur had taken place a few hours before. Died shortly.	Marked anæmia. Lungs congested and infiltrated. Kidneys small, pale, healthy. Stomach enormously dilated, reaching down nearly as far as crest of ilium, contained a large quantity of coffee-grounds fluid. The duodenum was also distended, and contained similar matter. No obstruction in intestines. Cancer of cervix uteri.	Stomach in mid region tubes healthy; muscular coat normal. Duodenum healthy. Pancreas lax and soft; its glandular vesicles very indistinct; the whole tissue converted into a mass of granulous matter, imbedding oil-drops, with large fatty masses here and there.
2	Kez. R.	45	F.	Legs swelled 2 months ago. Ascites last few weeks. Health good previously. Never had Rheumatism. Urine very albuminous. Loud systolic bruit at apex.	Heart weighed 21 oz.; mitral flaps thickened and cord. tendineæ, which were also shortened. Old pericardial adhesions and white patches. Pleurisy, effusion, general dropsy. Kidneys very wasted. Liver cirrhotic.	Tubes of mid region of stomach much wasted, with much intervening granular and nuclear deposit. Duodenum healthy. Pancreas rather lax and coarse grained; its gland-tissue not very well seen. The epithelium contains a vast deal of oily matter in the form of minute clusters of oil-molecules.
3	M. Sq.	21	F. s.	Admitted Aug. 18th, ill, confined to bed since April. Not well last 12 months. Has swelling and pain in left hip. An abscess had been opened over left trochanter 2 months ago. She declined, emaciating rapidly, and died November 14th.	Left hip joint disorganized; bones carious. Tubercles in both lungs. A large suppurating cavity in left. Heart, liver, kidneys healthy.	Stomach pale; tubes eminently healthy. Duodenum healthy. Pancreas healthy; glandular tissue distinct; much molecular oil in epithelium.
4	Mr. R.	39	M. m.	Drank much spirit and water. Several attacks of delirium tremens. Urine at last	Heart very flabby, not fattily degenerating to any great extent; valves healthy. Lungs healthy.	Stomach empty; reaction acid; tubes healthy. Duodenum healthy. Pancreas, the cut surface of peculiar dull grayish aspect; the vesi-

				contained some casts and but little uric acid. Died by asthenia, suddenly.	Kidneys and liver tolerably healthy. Body rather fat.	cles almost destroyed, and reduced to a mass of granular matter imbedding very much oily, with here and there groups of fat-cells.
5	Sarah W.	12	F. s.	In St. Mary's 14 days with rheumatism and pericarditis. Joints affected, and heart 2 days after admission. A previous attack 2 years ago. Treated by mercury, and leeches, which drew much blood. Died from dyspnœa.	Body emaciated and pale. Pericardium attached to parts outside, and internally almost universally adherent by thick layers of false membrane. Mitral valves thickened, with fibrinous vegetations on auricular edge. Aortic competent, but similarly fringed on ventricular margins. Lungs engorged with blood, almost consolidated. False membrane on pleuræ. Liver large and congested. Spleen and kidneys healthy.	Stomach appeared healthy; tubes natural. Duodenum appeared healthy, but its mucous membrane was thickly set with nuclei; in some parts congregated into large masses, like those in the stomach. Pancreas healthy.
6	J. I.	30		Ad. Nov. 17th. At work till 10 days ago, when he was suddenly seized with severe dyspnœa, since then confined to bed. Orthopnœa. Complete dulness in right back, with absence of breathing, vocal thrill and resonance. Died Nov. 20th.	Body œdematous and pale. Much fluid in right pleura compressing the lung; upper lobe congested. Left lung very emphysematous; cut surface deep scarlet, dryish, exuding thick dark blood. Heart large; extreme stenosis of mitral orifice; other valves efficient, but thickened. Pulmonary artery very large at origin. Liver hard—2 lbs. 14 oz. Kidneys not healthy. Right kidney, 6 oz. Left, 4½ oz.	Stomach, mucous membrane rather injected; tubes of mid region fairly healthy, but with more fibroid tissue than natural at lower part. Duodenum reddened generally by congestion; its structure appeared healthy, but containing here and there small nuclear masses, and in some parts quite infiltrated with nuclei. Pancreas of yellowish aspect; lobular divisions less numerous than natural. Glandular tissue far advanced in fatty degeneration; epithelium consisted solely of granular and oily matter, contained no cells or nuclei.
7	R. W.	56		Had been ill 8 months before his death. Appetite lost entirely some days previously. Tongue denuded, dry,	Body rather emaciated. Both lungs very emphysematous throughout, and puckered at their apices. Heart firm and healthy, except	Stomach contained some dark brown fluid, partly blood; reaction acid. Tubes broken up; mucous membrane softened. Duodenum healthy in structure, except near pylorus,

No.	Name.	Age.	Sex.	History of Illness.	Post-mortem Examination.	State of Stomach, Duodemum, Pancreas.
				and red. Has nausea and sense of weight at his stomach. Liver enormously enlarged. Legs anasarcous. Orthopnœa 2 or 3 days before death.	that the aortic valves were rather thickened and rigid. Liver enormously enlarged by encephaloid growths, the parenchyma between them was very fatty. Masses of soft encephaloid surrounded the duodenum and the right half of the pancreas. Kidneys nearly healthy; lower end of right very hard; its tubuli obliterated by fat and epithelium.	where it was invaded by cancerous ulcerations. Pancreas free at its left third, hard, and firm; its follicles very much obscured by interstitial granular homogeneous exudation, which also had penetrated their contents. These were very fatty, but the nuclei were very distinct, and rather numerous. The fatty particles appeared solid.
8	J. D.	43	M.	Ad. Sept. 1st, bad health for 1½ year, had frequent cough, hæmoptysis, emaciation. Got cold 10 months ago with hoarseness, which increased. Has now soreness about throat, increased by swallowing, talking, or coughing. Expectoration thin, frothy, and profuse. Voice scarce more than a whisper. He got weaker and more emaciated, could scarcely swallow from pain, and sunk exhausted, Nov. 22.	Lower lobes of lungs firmly adherent; nearly consolidated by inflammatory exudation; gray hepatization in some parts. Upper lobes emphysematous in front. Very small and few miliary tubercles throughout lungs. A cavity of the size of a walnut in the upper lobe of left, lined by a thick dense membrane. In larynx much superficial ulceration beneath the glottis and about the upper surface of cord. vocales. In left half of trachea 3 well-defined round ulcerations. Heart healthy. Liver very congested. Kidneys hard; capsule splits on removal.	Stomach, in splenic region mucous membrane destroyed by softening; tubes in mid region very healthy, but some fibroid formation taking place at their bases. Duodenum, mucous membrane softened in some parts, apparently somewhat thickened by exudation in others. Pancreas, glandular follicles not well seen; margin of limitary membrane often lost. The epithelial contents consist chiefly of nuclei and oily matter, with much less granular matter than is natural.
9	W. D.	57	M.	Sudden attack of hemiplegia on Nov. 25th; recovered consciousness, but	Both lungs in great part consolidated, with some recent lymph on left pleura, and old adhesions	Stomach large; much congested in splenic region; quite pale in others. In splenic and pyloric region tubes tolerably healthy.

				sunk and died, Dec. 1st. Of large make. Had been a great drunkard up to his death. Had a troublesome cough many months.	on right. Heart large, weighing 1 lb 3 oz.; valves healthy; cavities dilated. Kidneys and liver healthy.	Mid region, reaction alkaline; tubes rather obscured by interstitial fibroid tissue, and choked up with remarkably stunted and atrophied epithelium. Duodenum, basement membrane of surface not well seen; nuclear and granular deposit in substance of mucous membrane. Pancreas, follicles distinct, but epithelium very wasted and fatty, and containing scarce any cells or nuclei.
10	E. Trev.	28	M.	Received a blow in front of left ear, 2 months after which a tumour appeared, and grew in size so that at last it was as large as two fists. It originated 8½ years before death.	Body exceedingly emaciated. Tubercles numerous in peritoneum and in lungs. Peritonitis, pneumonia. Heart, kidney, liver healthy. Glands in neck on left side prodigiously enlarged by fibroid hypertrophy, forming a large mass in which softening of fibrinous deposits was taking place at various points.	Stomach in mid region very healthy. Duodenum appeared healthy, but abnormal nuclear formation was taking place throughout the mucous membrane. Brunner's glands healthy. Pancreas healthy.
11	J. B.	4 ms.	M.	Died of gradual wasting; ill from birth.	There was no tubercle; the lungs and all the organs appeared healthy; a little puriform fluid in bronchi.	Pancreas healthy. Duodenum healthy. Stomach in all three regions presented the tubes much obscured by nuclear and fibroid formation, probably from their development being imperfect.
12	J. H.	43	M.	Injury to left hand; after 14 weeks, diffuse inflammation commenced, which extended to arm and side. He got very low and weak, and sunk 1 month after admission.	Both lungs excessively œdematous at bases, and indurated at apices; Oiss of seropurulent fluid in left pleura. Kidneys large, affected with incipient granular degeneration. No purulent deposit anywhere. Other organs healthy.	Stomach healthy. Duodenum showed some wasting of the mucous membrane, and of the epithelium of the Brunnerian glands. Pancreas, the follicles were much less distinct than natural, but not destroyed. The contained epithelium was exceedingly abundant, probably abnormally so.
13	Cath. Reg.	45	F.	Ill about 7 months. Had 2 attacks of erysipelas.	Ascites and general dropsy; lower lobes of lungs much con-	Stomach healthy in every part. Duodenum healthy; absorption of chyle was

No	Name.	Age.	Sex.	History of Illness.	Post-mortem Examination.	State of tissues, &c. Microscopic Appearances.
				Heart's action weak and irregular; no murmur; pulse very weak. Ascites and anasarca from an early period of illness. Great emaciation. Most marked dropsical tendency. Attacks of hemorrhagic vomiting occasionally. Urine on 3 occasions found free from albumen. Constant orthopnœa. Signs of effusion into both pleuræ. Death occurred suddenly.	solidated; much fluid in pleuræ. Liver contracted by capsulating false membrane. Spleen very small, and its capsule thickened. Kidneys granular. Heart healthy.	taking place. Pancreas [illegible] numerous white spots on its surface: its glandular tissue completely degenerated into an amorphous granular and oily mass, in which lay numerous masses of fat vesicles.
14	F. L.	34	F.	Appetite usually good, enjoyed food. Ill 4 weeks, with sickness, which has been increasing. Matters rejected now of fecal colour, sometimes acid, at others not; very copious. A large tumour in epigastric and umbilical regions, only observed 10 days. Died exhausted in 2 days.	Body emaciated. Lower lobes of both lungs much congested; in left, some spots of pneumonic consolidation. Heart and liver healthy, the latter congested. Kidneys tolerably healthy. Glands behind stomach enlarged much. A fibrous tumour in anterior wall of body of uterus. Cervix much enlarged, and ulcerated at one part.	Stomach contracted, pale internally; muscular coat and submucous much thickened, the former most, in the pyloric region. The submucous tissue was condensed, and did not allow the free play of the mucous over the muscular. The mucous coat was whiter than natural in the splenic and adjacent part of the mid region, and presented many linear fissures. A large patch in the mid region was thrown into sinuous elevations; in this part there were pretty distinct traces of the tubes, but in the splenic and pyloric, they were utterly wasted and destroyed. The duodenum was partly degenerated in the same way, but to a less degree. Pancreas tolerably healthy, but nuclei proportionally too numerous in epithelium.

15	J. Wells.	38	M.	Symptoms of fever; double pneumonia; death at end of second week.	Lungs hepatized in the greater part of their extent. Heart, intestines, and kidneys, healthy. Spleen exceedingly soft.	Much nuclear and fibroid formation at bases of tubes in mid region of stomach, and extending up among them. Duodenum healthy. Pancreas, its gland tissue is reduced to a mere mass of granulous and oily matter; there are no cells, scarce any trace of nuclei, and none of gland-follicles.
16	J. Sh.	49	M.	A plumber, large and stout man, of very regular habits, never intoxicated. Suffered from eructation of frothy mucus and flatus, sometimes amounting to vomiting. Spirits depressed; nervous. Died suddenly, soon after a light supper.	Heart, its muscular tissue, and valves healthy; left ventricle thickened. Some atheroma in aorta. Lungs much engorged. Kidneys contracted; surface granular. Liver healthy. Spleen very soft. Brain healthy. Stomach much injected in all its mucous coat, which presented numerous shallow depressions, resembling ulcers. These were of oval, or linear, or irregular shape, about 2 to 4 lines in diameter, with grayish bases.	Tubes of stomach tolerably healthy in all the three regions, excepting the pyloric, where they were obscured by diffused nuclear formation. In the depressions, the tubes were exceedingly wasted by nuclear formation prevading the mucous tissue. Duodenum tolerably healthy. Pancreas lax; no gland cavities with limitary membrane to be seen, but merely a lobulated mass, consisting of nuclei, granular, and abundant oily matter.
17	M. A. E.	56	F.	Ill 7 weeks. Had severe pulmonary attack, orthopnœa. Appetite quite lost; great flatulence. Urine somewhat albuminous. The dyspnœa and debility increased, and proved fatal.	Lungs highly œdematous. Mucous membrane of bronchi red. Heart large, valves healthy. Liver slightly cirrhotic; and kidneys somewhat granular; texture confused. Stomach empty, its mucous coat very much injected all over. Capsule of spleen thickened.	Tubes in mid region of stomach healthy; epithelium abundant, and its particles well formed. Duodenum tolerably healthy, more nuclei in its substratum than normal. Pancreas exceedingly degenerated; gland tissue broken up into a mere mass containing much oil. Epithelium reduced to mere dim, faint traces of nuclei, with amorphous and oily matter.

No.	Name.	Age.	Sex.	History of Illness.	Post-mortem Examination.	State of Stomach, Duodenum, Pancreas.
18	J. R.	30	M.	Rheumatic fever 18 years ago; palpitation and other heart symptoms last month. Systolic and diastolic bruits. Heart's apex lowered; impulse heaving. Illness commenced with pain in epigastrium and dyspnœa, coming on after dinner, and taking an unusual quantity of beer. Urine slightly albuminous. Died suddenly, after 6 weeks' stay in hospital.	Much emaciated. Adhesions of left pleura general, except at apex; less extensive of right, but cavity contained much fluid. Both lungs engorged with sero-sanguinolent fluid. Heart greatly enlarged, weighed 2lb. 10 oz.; mitral valve much thickened. Liver healthy, but adherent to diaphragm. Kidneys much congested, left 7½ oz., right 8 oz. Capsule of spleen thickened.	Stomach, tubes in mid region in process of wasting, with very large subtubular nuclear deposits, and more or less inter-tubular nuclear formation. Duodenum and pancreas healthy.
19	J. S.	36	M.	A painter.—Has had several attacks of colic, last 6 years ago. Since then has suffered much from bleeding hemorrhoids, the discharge coming on at intervals of 3 to 4 weeks. Since it was arrested, 6 months ago, by medicine, has suffered from pain and swelling of abdomen, pain in chest and side, and inability to exert himself much. He had a waxy, pasty, aspect; his urine was highly albuminous, and contained casts. Dropsy came on, and increased to his death, which occurred about 6 weeks after his admission.	General pallor, œdema of lower limbs. Dropsy of tunica vaginalis testis. Right lung œdematous, much fluid in pleura. Left lung infiltrated with abundant sero-sanguineous fluid, and generally adherent. Patches of fibrine on pericardium. Liver congested; capsule white and thickened. Kidneys hard, contracted, granular.	Stomach, mucous coat much injected from stimulus of food. Tubes of mid-region quite healthy. Duodenum fairly healthy. Pancreas of firm consistence, yellow opaque colour. The limitary membrane of the glandular cavities is seldom to be seen, but the epithelium forms masses retaining often their shape. There are no cells in the epithelium; it consists chiefly of nuclei in great numbers, with abundant diffused oily matter. The gland appears to be in process of fatty degeneration.

20	H. T.	35	M.	Had ague at age of 15; from that time till 7 or 8 months ago, had good health. He then caught cold, and had hæmoptysis to a considerable amount. Phthisis set in, and ran its usual course in about 8 months.	Great anæmia. Heart healthy; but left ventricle quite filled with a coagulum of white fibrine. Tubercular infiltration of both lungs, most extensive in right. Cavities in both, one in right had ruptured into the pleura, which contained air and purulent fluid. Kidneys had rough surfaces, were not shrunk; tubes not healthy, some infarcted, others empty.	Stomach of dead whity aspect throughout; reaction of surface intensely acid; tubes in mid region found much altered by the acid. Duodenum appears healthy. Pancreas appears very healthy, its gland cavities are well seen, but the epithelium does not seem normal; it contains very few cells, and too many nuclei in proportion.
21	C. C.	37	M.	Gun maker, admitted Dec. 8th.—Always has had a slight cough, very troublesome last 2 years. Hæmoptysis has occurred in streaks, and latterly more copious. Last 9 months much troubled with dyspepsia. Emaciating for some time. Tongue very red at tip and edges. Has pain at epigastrium on deep inspiration. Urine very albuminous, contains casts. Very little dropsy. After his admission he had vomiting for a day or two, and afterwards persistent diarrhœa till his death, Jan. 14th.	Much emaciation. A very large cavity in right lung, several small ones in left, tubercles in both; recent pleurisy and pneumonia of left side. Heart, liver, spleen healthy. Kidneys contracted and granular. Numerous ulcerations in ascending colon.	Stomach empty; reaction not acid; pyloric region smeared with catarrhal mucus. Tubes of mid-region quite healthy, but their epithelium is scanty. Basement membrane of surface very perfect. Duodenum tolerably healthy; black pigment in tops of some villi. Pancreas, glandular cavities tolerably distinct; epithelium consists of multitudes of nuclei, with abundant oily matter in the form of minute drops. No cells, or only very imperfect ones.
22	F.	24	M.	Injured his back by falling 40 feet; was admitted completely paraplegic as regards	Great emaciation. Sloughs on nates. Heart, lungs, and liver healthy. Peritonitis, with fibrinous	Stomach pale internally; tubes of mid-region healthy. Duodenum healthy; chylous absorption taking place. Pancreas

No.	Name.	Age.	Sex.	History of Illness.	Post-mortem Examination.	State of Stomach, Duodenum, Pancreas.
				motion, and nearly so as regards sensation. The bladder was paralysed. The urine generally contained a deposit of ropy mucus; stools passed involuntarily. During last 6 or 8 weeks had frequent diarrhœa. Extensive bed-sores formed; and he died worn out in about 3½ days.	and puriform effusion. Kidneys healthy, except some semi-sloughy spots upon surface of left, very pale. Bladder greatly shrunk; mucous membrane sloughy in some parts, in others inflamed. Much puriform lymph in subserous tissue at back part of bladder. The 9th dorsal vertebra was crushed in some measure, so that it projected backwards, and pressed upon cord, but this organ was still entire.	apparently healthy, but the epithelium is in a wasted condition; it contains no cells, but consists chiefly of nuclei, and abundant diffused oily matter. Limitary membrane of vesicles less clear than it should be.
23	E. T.	34	M.	Carpenter. — Complexion sanguine. Had good health till 2 years ago; pain in region of kidneys last year; under treatment for diabetes last 6 months. The sugar disappeared from the urine while he was confined to animal diet, but after he was allowed some bread and porter, it returned. He got an attack of pleuro-pneumonia, under which he sank.	No emaciation. Right lung congested, but healthy. A large patch of recent lymph on lower and back part of left, the pulmonary tissue beneath the pleura for a considerable depth is consolidated. In upper part there was a small cavity, with thick whitish walls, it was uncertain if it was the remains of a tuberculous or other cavity. Heart and liver healthy. Kidneys healthy, except that their epithelium was exceedingly fatty.	Stomach was much distended, its mucous membrane was of a pale whitish appearance; its tubes healthy in all the three regions. The surface was covered with a quantity of black acid matter, containing a vast number of sporules and mould-filaments, with more or less altered blood-globules. Duodenum and pancreas healthy.
24	J. R.	4	M.	Was ill 1 week, with symptoms of inflammation of lungs. On admission, his face was pale and dusky; lips bluish;	Body pallid, not emaciated. Right lung hepatized throughout; recent lymph in considerable quantity on pleura. Left lung and	Stomach, tubes in mid-region healthy. Duodenum, covered with bilious fluid of marked acid reaction, healthy. Pancreas, the limitary membrane of the glandular

				pulse small, weak, 160; respiration rapid. The physical signs of hepatization of the posterior part of both lungs were observed. He died the same evening.	pleura similarly affected, but to a much less extent. Heart and other organs apparently healthy.	cavities was distinct; the epithelium consisted almost entirely of nuclei and diffused granular matter, with scarce any trace of visible oil.
25	M. A. L.	25	F.	Confined 16 months ago, never well since. Last 6 days constant vomiting of everything but water. Vomited fluid to day is deep yellow. Much thirst; can take no food; skin cool; pulse quick; very deep jaundice; bowels confined, stools at first lumpy and pale, afterwards fully bilious, and passed under her. She became comatose about fourth day, and died 2 days after, having brought up a great deal of blood some hours before death.	No emaciation. Intense universal jaundice. Lungs appeared healthy, but contained numerous patches of blood, which seemed to have been produced by the blood which was vomited passing down the air-tubes. Heart, spleen, and kidneys healthy. Liver small, deep yellow; its ducts pale and empty. Gall-bladder inflamed, containing a greenish mucus. There were some spots of bloody extravasation beneath the serous coat of the intestines. The cells of the liver were broken down, to a great extent, into an oily mass.	Stomach contained a good deal of blackish fluid; reaction acid; surface pale; tubes everywhere healthy. Numerous cells from the tubes in the mucus of the mid-region. Duodenum healthy. Pancreas very lax and soft, of dirty yellowish colour, and showing little appearance of lobulation; the reaction of the fresh cut surface was acid. Its gland-tissue was reduced to a detritus, the limitary membrane was destroyed, and there remained only masses of celloid particles, nuclei, and very abundant oily matter. It was in a very similar state to the liver.
26	S. W.	87	F.	Inmate of workhouse. Had chronic emphysema and bronchitis, got an acute attack supervening on the old, which proved fatal after a few days. Her intellects were failing. Appetite and digestion appeared to be tolerably good.	Body not at all emaciated; some eruption resembling psoriasis guttata on trunk and legs. Much sub-cutaneous and internal fat. Heart large, healthy. Both lungs œdematous throughout, congested posteriorly; bronchi inflamed and smeared with muco-pus. Liver large, firm, and congested. Kidneys slightly rough on surface, tolerably healthy. Spleen healthy.	Stomach exceedingly shrunk, mucous membrane congested and covered with some abnormal mucus. Tubes in mid region much wasted amid abundant nuclear formation, with large solitary glaud-masses. Much submucous fat. Duodenum healthy. Pancreas exceedingly soft and lax; reddish-grey colour, far advanced in fatty degeneration. The limitary membrane was lost, the nuclei and celloid particles were dim and faint.

No.	Name.	Age.	Sex.	History of Illness.	Post-mortem Examination.	State of Stomach, Duodenum, Pancreas.
27	N.	56	F.	Regimental clothes maker. Single. Always very delicate. Suffered for 30 years from pain in lower part of chest and in abdomen; weak digestion and attacks of pyrosis. Had sallow look, as if labouring under organic disease. Hæmatemesis to some extent, and copious melœna occurred about 6 weeks before death, and continued 14 days. Catamenia always scanty and irregular. Died suddenly one morning.	Body thin, very anæmic. Lungs pale and healthy. Heart small, exceedingly flabby, valves healthy, fibres very brittle. Liver, spleen, kidneys healthy. Uterus had several small fibrous tumours growing from the surface of the fundus.	Stomach rather distended, contained some highly acid chyme; mucous surface quite pale. An ulcer, the size of a split pea in lesser curvature, nearer cardiac than pyloric orifice. It had not perforated the mucous coat. Tubes in splenic and mid regions very healthy; those in pyloric very much wasted amid nuclear and fibroid formation. Duodenum and pancreas very healthy.
28	J. Dove.	44	M.	Coachman. Two attacks of rheumatic fever in last year, the last 6 months ago. Present attack commenced six weeks ago, with shivering and pain in joints. Last 14 days, giddiness, with pain in back of head. For 2 or 3 months has had a heavy pain in loins, and frequent micturition, especially at night. Has little appetite, or sleep. Left wrist now swollen and inflamed. Bowels regular. Urine, sp. gr. 10·10, albuminous. Arcus senilis. He became soporose for some days, but regained consciousness, and was improving in this respect when he sank from asthenia.	Body pale, rather thin. Heart healthy, but rather large, = 15 oz., valves competent. Lungs healthy, but œdematous, and congested posteriorly. Kidneys diseased, mottled, somewhat granular on surface, very soft. Liver and other organs healthy.	Stomach pale internally, mid-region reacted alkaline, its tubes were disintegrating amid abundant nuclear and fibroid formation. The mucous tissue had been rendered almost homogeneous by the alkaline fluid, and was restored so as to show its corpuscles, &c., by acetic acid. Duodenum altered by alkaline fluid like stomach, otherwise healthy. Pancreas healthy.

29	C. Q.	33	F.	Ill 3 months, taken to bed 8 days. Is exceedingly anæmic. Her first symptom was swelling of abdomen. Legs never swollen. Copious hæmatemesis the last 14 days still continuing to some extent. Blood also passed per anum. Digestion for a long time has been bad; has been subject, since childhood, to vomiting and sick headache recurring once a month or oftener. Urine more or less albuminous till her death, which took place in about 4 months from the commencement of illness.	Body very emaciated. Copious ascites. No peritonitis. Heart small, healthy. Lungs healthy. Liver very much shrunken, surface nodulated, traversed, though with some difficulty, by water injected into portal vein. No adhesions on surface. Kidneys not wasted, but their surfaces were not quite smooth. Uterus healthy. Spleen more than double its natural size, rather firm. The origin of the portal vein contained a remarkable firm, white, fibrinous coagulum, filling up the channel; it did not extend into the liver.	Stomach distended by gas; surface quite pale; tubes in all three regions remarkably healthy; some yellow pigment in the lower parts of pyloric tubes appeared to be the remains of former hemorrhage. Duodenum tolerably healthy, but pervaded to a great degree by nuclear formation. Pancreas peculiarly hard and dense, somewhat contracted, limitary membrane of glandular cavities less distinct than normal; epithelium abundant, consists of very perfect nuclei, with small wasted cell-particles united together by a dim amorphous substance, imbedding minute oil-drops. The hardness and density of the gland seemed to depend upon the condition of the epithelium, there was no unusual quantity of interstitial fibrous tissue.
30	W. W.	56	M.	Was attacked, Jan. 5th, with pain in chest, bad cough, loss of appetite, which had previously been very good. On admission, 10 days later, had much dyspnœa, muco-purulent expectoration, and cough. Pulse 80. Respiration 40. He improved for several days, but was attacked, on Feb. 4th, with great dyspnœa and pain in chest, and died next day.	Both lungs congested and œdematous throughout; there was decided hepatization of the back part of the right, and to a less degree of the left. The posterior and lower portion of the right pulmonary pleura was coated with fibrine. Heart quite healthy. Liver healthy. Kidneys flaccid, not shrunk; tubes infarcted; some cyst-like casts, and some traces of hemorrhage.	Stomach was pale internally, uncontracted; tubes of mid region were wasted to some extent, amid a good deal of nuclear infiltration. Duodenum healthy. Pancreas very lax and flabby, the glandular tissue was healthy, but there was a great deal of interstitial adipose tissue. The fat-cells were large, contained opaque whitish masses floating in a clear fluid.

SEQUEL OF A CASE

OF

EXTIRPATION OF THE UTERUS.

BY

JOHN WINDSOR, ESQ.,

SENIOR SURGEON TO THE MANCHESTER EYE HOSPITAL.

COMMUNICATED BY

J. M. ARNOTT, ESQ.

Received April 10th—Read April 24th, 1855.

On the 22d of June, 1819, a paper of mine was communicated by the late Sir Astley Cooper, to the Medical and Chirurgical Society, on the subject of 'Inversion of the Uterus,' with a case of successful extirpation of that organ. It was published in the Tenth volume of the 'Transactions' of the Society, and I now beg leave to offer a brief relation of the sequel of the case, up to the period of the patient's death, which occurred on October 27th, 1854.

As the operation of tying the inverted uterus was performed on the 22d of August, 1818, she appears to have survived it thirty-six years; and probably would have done so for a still longer period, had she not, as I have been informed by a relation of hers, met with an accident in travelling between Leeds and Bradford, by which a severe injury of the brain was produced, proving fatal in two or three days.

As to the history of her case after the removal of the uterus, I have not the means of saying much, owing to her having changed her residence, at no distant period afterwards, from Manchester into Yorkshire.

The published case concludes with the remark, "November 15th, 1819, Harriet Barwick has now for a considerable time enjoyed a very excellent state of health."

After that time I am not aware that I have any note of her progress until she called upon me on the 26th September, 1840. She reported that she was then fifty-three years of age, and that having married again, her name was now Broadbent. She said that for about ten years she had discharge of coagula irregularly, about every two to six months. After that period coagula occasionally, although rarely, were discharged from the vagina, but that for the last three years there had been no discharge at all.

For some account of my old patient after this time, I am totally indebted to the kindness of Mr. Teale, of Leeds, under whose care she afterwards chiefly fell, and by him I have also been favoured with the preparation of the parts interested in the uterine operation. By his permission, I am thus able to continue some notes of her eventful history down to its conclusion, and I gladly embrace the opportunity of doing so, in his own words, in the following letter from him.

"Leeds, Nov. 4th, 1854.

"My dear Sir,—During the last ten years a patient in whose history I think you will feel interested, has frequently been under my observation. I allude to Mrs. Broadbent, *alias* Harriet Barwick, whose inverted womb you removed in 1818.

"I am informed that about the year 1840, when at Bradford, she had a strangulated right femoral hernia, which was allowed to pursue its course without any surgical treatment. In eight days, the hernia and its coverings sloughed, fæces were discharged from the wound, and in six weeks the abnormal anus spontaneously closed.

"In December, 1850, I operated on her for strangulated right femoral hernia, and in six weeks afterwards, during my illness, my friend Mr. Smith, of the Leeds Infirmary, again operated on her for right femoral hernia.

"In 1853, she again became the subject of strangulated hernia in the same part, and being then at Bradford, she telegraphed for me under a feigned name, and I found my old subject, Mrs. Broadbent, again suffering from strangulated right femoral hernia. On this occasion, with some difficulty, I reduced it by the taxis.

"In October, 1854, she was seized with affection of the brain, which proved fatal.

"I have had the pelvic organs removed, and offer them for your acceptance, if you would wish to place them in your museum.

"If, however, you do not desire to preserve them, I will add the preparation to my own collection.

I remain, dear Sir,
Yours very truly,
THOMAS P. TEALE."

The preparation of the remaining portion of the uterus of the late Mrs. Barwick, *alias* Broadbent, so kindly offered to me by Mr. Teale, and sent November 9th, 1854, shows well the os uteri apparently in its normal state, it is about half an inch in width, a probe passed through it into the blind or closed cavity beyond does not penetrate more than three eighths of an inch. This, therefore, is all which remains of the truncated cervix uteri by the operation performed in 1817. (See 'Medico-Chirurgical Transactions,' vol. x, p. 358.)

The communication with the abdomen seems to have closed well, and on the abdominal aspect of the cervix (or opposite to the vaginal one) a sort of extended membranous or fleshy surface is seen, on which a portion apparently of one Fallopian tube with its fimbriated extremity can be traced, and near it is an appearance of an atrophied ovarium.

On the opposite side are somewhat similar appearances of tube and ovarium. Both terminate in the membranous-like expansion, near to the cervix uteri; each being about two inches in length.

I trust that it will be satisfactory to the Society to receive this concluding report of a case, rendered so interesting by the additional remarks of Mr. Teale.

CASES OF

DISEASE OF THE LARYNX,

AND SOME

OBSERVATIONS ON THE OPERATION OF TRACHEOTOMY.

BY

T. A. BARKER, M.D.,

PHYSICIAN TO ST. THOMAS'S HOSPITAL, AND LECTURER ON CLINICAL MEDICINE.

Received May 7th.—Read May 8th, 1855.

The following brief sketches of cases of disease of the larynx and trachea, are brought before the Society for the consideration of the Fellows, not only because they possess some features of interest as unusual varieties of disease,—but also as being suggestive of the propriety of performing the operation of tracheotomy, in some cases, much earlier than is the ordinary practice; that is, before the commencement of those very urgent symptoms which seem to leave no alternative except the immediate performance of the operation, and speedy death.

The first case is that of J. W. H—, a small boy, æt. 7½, who was admitted into St. Thomas's Hospital, under my care, on the 31st of October, 1854.

His mother, who had brought him to the hospital, had gone away before I visited the ward; and, as the child could only speak in an abortive whisper, I could not, at that time, obtain any reliable history of his illness.

At first sight, I thought the boy was labouring under an attack of croup: he kept the head constantly thrown a little backwards; and the respiratory sound and cough were such as are ordinarily heard in this disease. But, after he had been watched a short time, I noticed that the breathing was regular, though laboured and rather rapid; that there was little appearance of general uneasiness or febrile disturbance; and that there was no pain when the larynx and trachea were pressed. When he swallowed, there appeared to be some difficulty of deglutition, but no pain. The face was not flushed; the pulse 112, and small; the tongue coated; the respirations were 22 in the minute, and, as already stated, laboured, but perfectly regular; and with no appreciable intervals between the acts of inspiration and expiration. The chest was round and remarkably resonant in every part: nevertheless, as is frequently the case when the larynx is partially obstructed, no breath-sounds could be heard when the stethoscope was applied to the chest.

It is difficult to convey, by means of words, the exact amount of the urgency of such symptoms as were present when I first saw this case. It was, however, such, that had the patient been an adult, and had his history shown that the disease was acute, I should not have thought it safe to wait for the comparatively slow action of such remedies as mercury and antimony; but, if immediate relief had not been given by the abstraction of blood, I should have recommended tracheotomy. The greater difficulty and risk of the operation in a child seven years of age, as well as the greater doubt, than in the case of an adult, as to the state of the trachea and lungs, would have made me hesitate in this instance, under any circumstances. Other considerations, also, led me still further to question the propriety of operating. I have already stated that the child could only speak in an abortive whisper; nevertheless, as he was intelligent, I had no difficulty in ascertaining, by his signs of assent and dissent, when questioned, that he had been ill for more than a year; and that he had not become worse during the last fortnight. This was borne out by the state-

ment of the mother, two days afterwards, who informed me that he had always been hoarse, and had had a remarkable wheezing from his birth; that he had caught a bad cold a year previously, when he had symptoms similar in kind to those now present; that he improved in the summer, though he did not recover his voice; that the respiration became more wheezing and more laborious early in the autumn; and that the symptoms had, since that time, very gradually assumed their present character.

Leeches were applied to the sternum, and small doses of tartar-emetic were given, at short intervals (gr. $\frac{1}{4}$ every two hours) and the next day he could whisper so as to be understood; he breathed more easily; there was less wheezing; and some faint breath-sounds could be heard in the chest. A blister applied below each ear gave additional relief. A few days afterwards he relapsed; and then, in my absence Hydrarg. cum Cretâ, and mercurial inunction were ordered. Each report, on November 9th, 10th, and 11th, states that he had improved; the breathing was easier, the respirations remained about 22 in the minute, but were less laboured, and there was an interval between expiration and inspiration; the pulse ranging from 80 to 95; but on the 12th, after a restless night, he died very suddenly. The statement of the sister of the ward was, that he appeared much better when she had last seen him on the night of the 11th; and the night-nurse asserted, that although he had been restless, there had not been more wheezing, cough, or difficulty of breathing than she had noticed on former nights. These statements are now alluded to because they bear upon observations to be soon made, on the possible nearness of a fatal termination, in laryngeal affections, not only when they appear to be stationary, but even when the patient appears to be making progress towards recovery.

Post-mortem, thirty hours after death.—The bronchial tubes and trachea contained a good deal of frothy mucus; but, in other respects, both those parts and the lungs were healthy. The following account of the appearance of the

larynx has been furnished by my colleague, Dr. Bristowe. The rima glottidis was almost completely closed by a warty growth, the size of half a marble. The growth sprung from the upper and lower chordæ vocales, and the interval between them. The whole circumference of the rima, except quite the posterior part, was closed. The tumour consisted of three or four more or less pedunculated masses. It was, for the most part, of a whitish colour, somewhat tough, and appeared to consist of almost horny processses, from one eighth of an inch downwards in length. One of the masses was formed of minute, reddish, clavate processes. Under the microscope it presented the characters of an ordinary warty growth. The parts springing from either side had become flattened by mutual pressure, and the only available space for respiration was a very narrow passage at its posterior part. The posterior surface of the epiglottis, especially at its lower part, was studded with elevations about the size of a pin's head, which appeared due to enlargement of the glands. No other morbid appearances of importance were observed on other parts of the body. The size and form of this growth are well shown in the accompanying plate.

As this is not a common disease, I take the opportunity of exhibiting to the Society a similar specimen taken from the Museum of St. Thomas's Hospital. It is an old preparation, and no history is attached to it.

I believe it will be admitted that tracheotomy was not expressly indicated in this case. Had the disease been acute or progressive, and had not the boy been immediately relieved by leeches and antimony, I should have recommended the operation. But the disease was neither acute nor progressive; and considerable relief was speedily given by the remedies used. If, however, the same symptoms had been present in an adult, in whom the operation would have been free from many of the difficulties and objections which occur when it is performed in young persons, I consider that the operation should have been performed so soon as it had appeared that immediate and material relief, by other means,

was not to be obtained. There are certain points common to such cases, whether they occur in children or adults, viz., an incurable disease in the larynx, almost certainly going on to such closure of the air-passage as would destroy life; together with so healthy a state of lung as would allow life to be prolonged if air could reach it through an opening in the trachea. Nevertheless, an operation which might have been judiciously recommended in an adult, was, for reasons already stated, of more doubtful fitness in the case of a child. This case also illustrates another circumstance which may take place in an adult equally with a child, viz., that the diseased larynx may become so patent as to lead to a hope that the patient is progressing favorably; when, unexpectedly and without apparent cause, an increase of disease occurs, and the person dies suddenly.

The next case and preparation well illustrate how death may unsuspectedly approach a person with laryngeal disease, and how suddenly life may be terminated. It is the larynx of a young woman, in which the epiglottis appears like a monstrosity, from its enlargement and altered shape, which have been caused by thickening of the mucous membrane and infiltration of the sub-mucous tissue; and the same may be said of all the membrane surrounding the glottis. The lining of the larynx is similarly affected, and to such an extent that the sides of the larynx were almost in contact, and the aperture had, immediately before death, been completely closed by a bit of tenacious mucus.

Much surprise will be felt, after an inspection of this preparation, when it is known that the person from whom it was taken was supposed to be in good health a minute before death took place. She had had a sore throat, supposed to be venereal; but all appearance of disease about the tonsils, &c., having been removed, and having reported herself as "well," she was marked for dismissal from the hospital on the fixed day. Before that arrived, one of the pupils was looking at the throat, when she coughed, fell back on the bed, and expired. No other cause of death than the diseased larynx could be found. I did not see this case

during life, but I made the post-mortem examination, and feel sure the history is correct.

The next case is one in which it will be seen, by the preparation, that the larynx and neighbouring parts are singularly altered. Ulceration, thickening, and cicatrization have been extensively at work in the larynx, and upper part of the trachea; and have converted the air-passage into a rough, narrow, and tortuous channel. It was taken from a man between thirty-five and forty years of age, who had suffered from chronic laryngeal disease long before I saw him. Whilst under my care, the symptoms were referable solely to the laryngeal affection, being almost complete loss of voice; long, laborious inspirations and expirations, without the slightest appreciable interval; harassing cough; and an entire absence of breath-sounds when the ear was applied to the chest, though it was naturally resonant in all parts. As no treatment gave relief, I was anxious to have the trachea opened, and I believe the man would have consented; but those whom I consulted, taking into consideration that the disease, or, at all events, the symptoms, had been stationary for many weeks, did not encourage me to order the operation, unless the man became worse. He did ultimately become worse, but at so short a period before death, that no one knew when the unfavorable change took place. This occurred thirteen years ago. I should now, in a similar case, unhesitatingly recommend the operation. Every organ in this man's body was sound, except the larynx; and I see no reason why life might not have been much prolonged by an operation.

The case illustrated by another preparation is the only one in which I have been able to obtain the patient's consent to have the operation performed more as a precautionary measure than for the removal of manifest and pressing danger. It was taken from a woman, æt. 40, who had long been the subject of chronic laryngitis, and had had other secondary venereal disease. Before she came under my care, she had, on more than one occasion, been threatened with immediate suffocation; but the urgent symptoms had

passed off. After she came under my notice, she had occasional exacerbations in the dyspnœa, without apparent cause; and, to avert the prospect of a sudden fatal attack, I induced her to submit to the operation. She wore a trachea tube, and for ten weeks had no unfavorable symptoms. At that time, without any known cause, she became desponding, took very little nourishment, and in ten days she died.

In addition to the disease of the larynx, seen in the preparation, there is an oval opening about a quarter of an inch in diameter, between the upper part of the trachea and the œsophagus. In the recent state, this opening was covered, on the œsophageal side, by a valve-like fold of mucous membrane. During life, articles of food and drink occasionally passed through the external opening in the trachea.

The conclusions to which I have come, from a consideration of these and other cases of disease of the larynx, which have been under my notice, are, that the probability of a fatal termination, cannot, within certain wide limits, be measured by the urgency of the symptoms; that patients affected with chronic disease may remain apparently stationary, or may apparently be improving, and, nevertheless, may either expire suddenly, or with so short warning of increased danger, that timely aid cannot be procured. What, therefore, ought to be the duration and amount of disease to justify the recommendation of tracheotomy in those cases which would ordinarily be pronounced not to be urgent? This is a question which will require all the experience, tact, and judgment of the medical practitioner to solve. No general rule can be laid down, and each case must stand by itself. Of one point, however, I feel certain:—at present there seems little risk of the operation being performed unnecessarily. For one case where the operation may be performed prematurely or unnecessarily, I believe it to be neglected in many where it offers a fair prospect of prolonging or saving life. I will add a remark upon those cases in which the operation has been performed, in consequence of the urgency of the symptoms, and the failure of

other remedies, proving it to be a last resource. In all such cases where I directed the operation to be performed, and in all where I have seen it performed by the direction of others, it has appeared to me to have been done too late; that is to say, not too late to save the life of the patient, but so late as to cause increased difficulty and danger in its performance; and to leave the patient in a far worse condition, as regards present comfort and the prospect of ultimate recovery, than if the operation had been performed earlier. The difficulty of the operation is greatly increased as the congestion of the veins of the neck becomes greater; it is often rendered tedious by the necessity of waiting till hemorrhage has been arrested before the trachea is opened; and, with every precaution, a large quantity of blood often enters the trachea and harasses the patient by exciting violent cough. Nor is profuse venous hemorrhage the only evil connected with the performance of the operation, which arises from delaying it too long. When the aperture of the larynx is closed beyond a certain point, the spasm which may arise on the first application of the knife, threatens the patient with suffocation; and thus, not only is the operation protracted and rendered more difficult, but considerable risk of immediate death is incurred. In two of my cases this risk has been very great: one of them I will briefly narrate. The patient was a man of middle age, who had been ill only a short time, and symptoms which indicated the probability of acute laryngitis had commenced only a few hours before I first saw him, at 11½ a.m. He was immediately cupped, which relieved him for a short time. Two hours afterwards the symptoms, though not very urgent, were such as, in my opinion, justified me in recommending tracheotomy; but an hour unfortunately elapsed before it could be done. The symptoms had then become more urgent, though not alarmingly so; nevertheless, after the first incision, inspiration seemed to be completely stopped; and Mr. Clarke, who was performing the operation, considered death to be so imminent, that he felt it necessary to open the trachea immediately, regardless of the profuse and unchecked flow of blood, which

it was impossible to prevent entering the opening; and which caused great fear of suffocation. The man recovered; and is now, three years later, my patient for another malady; but quite free from any disease of the air-passages.

It is almost superfluous to allude to the mischief which may arise in other parts when the operation is needlessly or unavoidably delayed; so that, whatever may be the immediate result, the operation fails to give permanent relief. The chief danger, of course, is that of congestion of the lungs. One of my patients died from this cause alone, though the operation was neither tedious nor difficult; and appeared, at first, to have been completely successful. She would not consent until her case was almost hopeless.

The preceding observations may perhaps be considered by the Fellows of the Society as trivial and unnecessary. But when I compare the results of my own experience with what I have read and heard of the operation of tracheotomy, I can come to no other conclusion than this,—that the importance of performing it early, and before rather than after very urgent symptoms have commenced, is not sufficiently kept in view. No doubt the period at which the operation is to be performed cannot always be decided by the medical attendant. Patients and patients' friends have to be consulted; the operation naturally excites much alarm, and appears to them full of danger; and it often happens that nothing but extreme suffering, and unmistakeable imminence of danger, will induce a man to have his life saved, by having, as he would express it, his throat cut.

In conclusion, I must apologise to the society for the form in which these cases and observations are laid before them. They were promised to the secretary some time ago; but as there was a prospect of some difficulty in respect of exhibiting the preparations, I abandoned the intention, until last Saturday, when I was requested to send it before this evening, if possible.

Since this paper was read, another case, under my care, has terminated fatally, in which there can be little doubt

that life might have been saved, if the man would have allowed the operation to be performed. The disease was seated almost exclusively in the mucous membrane covering the aretænoid cartilages. The lower part of the larynx, the trachea, and lungs, were free from disease. The man acknowledged his danger; had an example in the same ward of a person in whom the operation had been successfully performed; and yet he refused to allow it to be done for him.

RESEARCHES ON GOUT.

BY

WILLIAM BUDD, M.D.,

PHYSICIAN TO THE BRISTOL ROYAL INFIRMARY.

Received May 10th.—Read May 22d, 1855.

In the month of October, 1852, an elderly man died in the Bristol Royal Infirmary who had long suffered severely from gout; and through the kindness of one of my colleagues, whose patient he was, I was enabled to obtain an examination of some of the diseased joints. The parts which came into my possession were taken from the knees and elbows. The cartilages covering the ends of the bones composing these joints presented fine specimens of the characteristic gouty deposit, and the bursæ which overlie the patella and olecranon, were also full of it.

Since then, I have obtained incrusted joints from seven other gouty subjects. In one case they were taken from the body of a man, and in another from that of a *woman* recently dead; in the five others from preparations in museums.

The series which has thus come into my hands has comprised specimens of diseased cartilage from the knees, elbows, wrists, ankles, and from nearly all the smaller joints of the hands and feet, besides several bursæ connected with these various structures.

All these specimens have been subjected to careful microscopic and other examination.

The results thus obtained constitute the first part of the

following researches. The second is devoted to the blood and some other fluids of persons suffering from acute gout.

The bursal deposits may be very briefly disposed of. The result of my examination of these may be best stated by saying that it almost entirely accords with that obtained by other observers. The great bulk of the foreign matter in all the specimens I have examined consisted of urate of soda, associated in various proportions with calcareous salts. The amount of the latter was sometimes considerable. Much more minute in quantity, but constantly present, were some organic compounds, which I pass by at present, but of which an account will be given in another page.

The diseased cartilage must be more minutely dealt with.

When a cartilage, which has become the seat of gouty deposit, is closely examined, it is at once perceived that the foreign matter is not laid down on the free surface of the cartilage, as one might have at first sight supposed, and as the descriptions of many writers would seem to imply, but is in the strictest sense interstitial.

The general distribution of the deposit in the diseased structure is in many points worthy of remark.

In well-marked specimens it extends over the greater part of the surface of the cartilage in a continuous layer.

Two very important circumstances are to be observed of this layer. The *first* is that *it penetrates to a comparatively small depth into the substance of the cartilage*—occupying, generally, not more than a fourth or a sixth of its thickness; the *second*, that, as a general rule, *it either stops short of the borders of the cartilage, or is more or less irregular in outline, or broken in continuity, as it approaches these.* One of the recent specimens exhibited a fact of still greater interest.

It is well known that, in the case of the larger cartilages (such as those of the knee-joint, for example,) immediately under the synovial membrane, and at the point where this membrane becomes attached to the border of the cartilage,

there is a rich network of blood-vessels. From this network a series of straight vessels arise which pass to a certain distance over the free surface of the cartilage, forming loops which often present considerable dilatations.

In the specimen referred to, whether from recent inflammation or some other cause, they were more developed than common, and being distended with blood were very conspicuous.

Now the fact to which I wish to draw attention is, that wherever these vessels extended the gouty matter was either very scanty or altogether absent. A margin of free cartilage surrounded them on all sides, so that the deposit seemed, so to speak, to recede before the blood-vessel.

Although these facts may seem, at first sight, to be of slight importance, there is reason to believe that they hold a relation of fundamental interest to the pathology of the disease before us.

If the superficial continuous layer just described be removed by a thin section, the substance of the cartilage beneath is seen to be speckled over by a number of minute dots of the same white material. In their form, size, and general appearance, these dots bear a certain resemblance to the minute nodules of oolite, which have earned for that geological formation the name it bears. Exactly similar dots are often more or less thickly sprinkled over the space which lies between the continuous layer and the borders of the cartilage. *Whether we pass, therefore, from the centre of the cartilage towards its border, or penetrate from its surface to the layers beneath, we meet with the same general fact; namely, a minor degree of impregnation by the foreign matter.*

When a series of sufficiently thin sections of cartilage thus affected are examined under the microscope many facts of remarkable interest are at once disclosed.

The first thing that strikes the attention is the beautifully crystalline character of the deposit. On further examination, however, the foreign matter is found to take two distinct forms. In some situations it is granular or

amorphous, in others, as already mentioned, perfectly crystalline.

Figures 1, 2, and 3, present good examples of these opposite types.

Figure 1 exhibits, in addition, a fact of some importance. The specimen from which the drawing was taken was obtained by a slightly oblique section, and the continuous curved outline represents the free surface of the cartilage. When examined by the naked eye, the gouty matter in this specimen looked exactly as if it were deposited *on* this free surface, and *externally* to it. But so far from this being the case it will be seen, by reference to the figure, that it was separated from the surface by an overlying lamina of considerable thickness. This lamina, which appears to be fibrous in its structure, and which, I presume, must be styled the perichondrium, was, in the greater part of its extent, entirely free from any impregnation by the foreign matter. I have observed the same fact in many other instances, and it is well shown in many of my mounted specimens.

Of the two forms of deposit the crystalline is by far the more general, and I need scarcely add that it far surpasses the amorphous in point of interest for the pathologist.

Although the crystalline groups of which it is made up exhibit some varieties, they may nearly all be referred to one leading type. Its form is that of a central opaque mass, from which radiate, in all directions, crystalline needles of great delicacy and beauty.

Figures 2, 3, 4, give a better idea of the character of these deposits than could be conveyed by any description. From an inspection of these figures it will be seen that the chief variation to be remarked in them has relation to size.

In regard to this point the range is wide. From the larger masses visible to the naked eye, there is an unbroken series of deposits, whose centre is a single microscopic granule of extreme minuteness.

Beside these leading types, there are now and then met with, crystals in grass-like tufts, and, in a few specimens,

others, which, in general appearance and mode of ramification, closely imitate some of the simpler *algæ*.

Foliaceous crystalline scales are numerous in some examples.

I have also met with a single crystal of the thorn-apple variety (Urate of Ammonia), and once with a group of well-defined rhombic prisms, radiating from a common centre.

Two questions have now to be considered regarding the peculiar matter which is deposited in these interesting forms in the living tissue.

1st. What is the chemical constitution of this matter? and 2d, What relation does it hold to the living elements in which it is imbedded?

The exact relation of the gouty matter to the structural elements of the cartilage is, for many reasons, difficult to make out. One principal difficulty arises out of the great opacity of the deposit. The result of this is that wherever the deposit occurs in mass, the elements of the tissue with which it is united are entirely hidden from view. Other circumstances might be mentioned, if need were, which tend still further to perplex the observer. In studying a sufficiently extended series of specimens, it gradually becomes evident, however, that a relation of some sort subsists between the deposit and the proper cartilage-corpuscle or cell: or, to be more explicit, that, (in many instances, at least,) the cartilage-cell is the focus of each individual deposit—the original centre, within and around which the crystallization occurs.

It would occupy much space to detail at length the evidence on which this statement is founded. It is gathered, partly, from the form, size, and grouping of individual deposits; partly from appearances disclosed by the help of reagents, and partly from the occurrence of groups of crystals in a very early stage, in which the relation between the cell and the crystalline matter is plain to the eye. The nature and value of the evidence to be drawn from the first and last of these three sources can only be fully appreciated by an examination of actual specimens.

It is important to add that this relation between the

foreign matter and the cell is far from being universal, and that even where it does exist it is transient only.

In the growth of each individual deposit it is evident, in fact, that the needles radiating from it soon come to radiate, not to this or that individual cell, *but to the whole central mass*. So that whatever dynamic relation (if any) may once have existed between the cell and the foreign matter, is soon superseded by the common physical influences in action around it.

The facts bearing on the chemical constitution of the deposit are simple and clear, and may be stated in few words.

By appropriate methods it may be readily ascertained that this deposit is almost entirely made up of a single substance—the *urate of soda*.

In one point, the deposit in cartilage offers a very great contrast to the deposits which occur in *bursæ*. In these last, as I have already remarked, there is always a considerable admixture of calcareous salts; or, to speak more precisely, of carbonate and phosphate of lime. In some specimens these substances even outweigh the urates with which they are associated.

In the cartilage, both these salts are almost entirely absent; the mere traces of them which do exist being altogether insignificant when compared with the urate of soda which constitutes the bulk of the foreign matter.

This fact is important because it not only entirely confirms the view that the calcareous salts are only incidental constituents of the deposit, but because it indicates, not obscurely, what is their real origin.

Their absence in the non-vascular cartilage, and their presence in the concretions of the comparatively vascular *bursæ*, point clearly enough—as Dr. Garrod had, on other grounds, already surmised—to inflammatory effusion as their real source. They are not related to gout as *gout*, but to gout as *inflammation*.

Certain other organic compounds which were mentioned as occurring in minute quantity in the bursal concretions are again met with in the incrusted cartilage.

For reasons which will appear in the sequel, what little I have to communicate respecting them will be best deferred to the latter part of this paper.

Reserving for some other occasion the inferences to which the preceding observations lead, as to the first origin and subsequent growth of this singular deposition of crystalline matter in the substance of a living tissue, I pass to the second series of researches; those which relate to the blood and other fluids of persons suffering from acute gout.

These researches were undertaken with a specific object.

There are many and conclusive grounds for believing that in attacks of acute gout, beside the gouty matter which is deposited in the cartilage and other structures in the forms already described, there is another portion which *disappears* in consequence of its reduction in the more vascular parts of the inflamed joint into more elementary compounds, by the agencies at work in the seat of the local paroxysm.

These grounds are partly pathological, partly chemical. To develope them fully would occupy much space. Of the pathological grounds it will be enough, at present, to say that they are founded chiefly on considerations which tend to show—1st. That the cartilage, although the principal, and, in many cases, the exclusive seat of the gouty *deposit*, is not the principal and still less the exclusive seat of the gouty *action;* and—2d. That, in many cases, at least, while the fit of gout is plainly, as far as the system is concerned, a depurative process, the amount of depuration effected in individual fits is not represented by the amount of gouty matter actually deposited on the joint.

The chemical grounds are based, principally, on the well-known and cardinal discovery by which Liebig and Wöhler showed that when uric acid, (the principal ingredient of the gouty matter,) is acted upon by peroxide of lead it is converted into urea and other compounds, and on the more recent researches by Frerichs and Wöhler, which render it probable that this substance undergoes a similar change, even in its passage through the living organism.

The view that in attacks of gouty inflammation the mor-

bid matter is disposed of in the twofold manner here indicated—partly, that is, by way of deposit, and partly by way of resolution into other compounds, by the oxidizing agency of the inflammatory act—is in striking conformity with all the leading facts in the morbid anatomy of the disease.

Among these may be mentioned, especially, the well-known preference of the gouty deposit for the non-vascular structures of joints; and, next to these, for all those structures in which, whether from organization or disease, the circulation of arterial blood is hindered or inactive.

Some of the principal facts detailed in the preceding pages appear to give a special sanction to the same view. I refer especially to those which relate to the distribution of the foreign matter within the cartilage itself. In all cases the bulk of the deposit occurs in the superficial layer of the cartilage, and in its central portions; that is to say in those points which are most removed from the sphere and influence of arterial blood, and of the inflammatory changes to which it ministers.

Of especial value in the same sense is the particular case spoken of in a former page, in which around every blood-vessel or group of blood-vessels which could be traced into the thickly incrusted cartilage, there existed a free marginal space in which no atom of deposit existed. The following inquiries were the direct offspring of these considerations.

Assuming it to be the fact that in acute gout a portion of the morbid matter is resolved into other compounds in the way here suggested, it seemed probable that under appropriate conditions we might be able to detect the products of its decomposition in the blood of the patient.

Whatever their result may be supposed to indicate, it was with the express object of determining this point that the following experiments were made.

Of the known products of the metamorphosis of uric acid, urea was the one sought for, as being, on many grounds, the most likely to lead to appreciable results.

The method followed for its detection was that in ordinary

use. An alcoholic extract obtained in the usual way from the blood or serum of the gouty patient was treated by nitric acid, and the result subjected to microscopic, and, where necessary, to other examination.

In every case but one the specimen to be examined was rendered slightly acid, prior to evaporation, by the addition of a small quantity of acetic acid, as recommended by Lehmann—a precaution which I believe to be absolutely necessary, in the majority of cases, to prevent the examination from being entirely nugatory.

In all cases the examination of the morbid product was begun within an hour of its removal from the body, and in most, it was completed without any pause in the necessary operations.

Case I.—On the 5th of April, 1853, three ounces of serum were obtained by means of blisters applied to the knees of a man who was suffering at the time from acute gout in these and several other joints.

On adding a drop of nitric acid to a small portion of the alcoholic extract of this serum on a slip of glass, crystallization began at the moment and at the point of contact, and diffused itself with the diffusion of the acid until nearly the whole became a crystalline mass.

On examining the specimen under the microscope, the crystals composing it were found to consist chiefly of rhombic and hexagonal plates thickly grouped together, and a few obtuse octohedra. In form and general arrangement these crystals presented the well-known characteristics of nitrate of urea. On drying the specimen there were observed, on the borders of the field, and beyond the limits of the action of the acid, numerous rods of urea; some tapering and conical, others with bevelled ends, and all of quite characteristic forms.

The remainder of the alcoholic extract, on being treated with nitric acid, became immediately an almost solid mass.

The patient's urine was transparent, of pale amber colour, and of specific gravity 1·016. It contained no trace of

albumen; no casts of the uriniferous tubes; no mucus corpuscles or other evidence of renal obstruction, old or recent. The exact quantity passed in the twenty-four hours was not ascertained, but was estimated to be quite equal to the average.

It is worthy of mention, that in this case the morbid product exhaled, pending its evaporation, a strong *urinous* smell;—a phenomenon I have met with in other cases where the blood has been charged with similar ingredients.

Case II.—One fluid ounce of blood obtained by leeches applied to the hand of a man who was suffering from gout in that and other parts, was treated in the same way as the serum in the last case, and with the same result. On the addition of nitric acid the alcoholic extract instantly became a solid mass of nitrate of urea.

Some serum procured two days afterwards, by means of a blister to the gouty hand, was also found to be largely impregnated with urea.

This man's urine was of a bright amber colour, transparent, and of specific gravity 1·023. It contained no trace of albumen, fibrinous casts, or other indications of renal disease, old or recent.

Since making these analyses I have met with nine other cases in which I have detected urea in the blood, or serum, or both, of persons suffering from acute gout, there being at the same time no albumen in the urine, or any other indication of renal disease or obstruction. The quantity of blood subjected to examination varied from three fluid ounces to six fluid drachms. The exact amount of urea obtained was not determined, but, in the smallest portion of blood examined it existed in quantity sufficient to admit of its ready identification by microscopic and other characters.

In seven of the nine cases, the specific gravity of the urine ranged from 1·022 to 1·024. The quantity secreted in the twenty-four hours being very nearly, if not quite, equal to the average. In all the local inflammation ran high, and

in the greater number several joints were at the same time severely affected.

I have now to add that uric acid and its derivatives are not the only compounds which are met with in abnormal amount in the blood and other parts in gout; but that, in some cases, at least, if not in all, these compounds are associated with another group.

In the month of October, 1853, I made an analysis of two fluid ounces of blood taken from a man—Coleman by name—who was at the time the subject of severe and acute gout.

After having satisfied myself of the presence of urea in it, the great bulk of the alcoholic extract was treated by nitric acid in excess. A copious precipitate of nitrate of urea at once occurred, followed by a gradual crystallization of slower growth, which took place on the surface and around the edges of the liquid.

On examining the product afterwards, under the microscope, there were found, beside the nitrate of urea, great numbers of prisms of a pale yellow colour, very regularly formed, and of considerable size and length.

Figure 5 gives a tolerably accurate representation of them.

Beside the forms there delineated, there were numerous groups of rhombic prisms ranged round a common centre in the form of rosettes. In these rosettes, which in general appearance strikingly reminded one of certain species of *echini*, there were usually one or two crystals greatly exceeding the others in length.

All these crystals dissolved readily in alcohol, as also, but more sparingly in boiling ether; sparingly in cold, but readily in hot water.

I may add, that I have met with a compound possessing the same general characters in several other specimens of blood from persons suffering under acute gout; although in none did it exist in so large a quantity as in the case now related. I have also extracted a precisely similar substance from several specimens of gouty cartilage, from which,

although its quantity is minute, it may be very readily obtained in a separate state.

Under the blowpipe this substance burns without residue, exhaling copious white fumes, and a strong odour of cumarin.

From these characters I presume it consists of hippuric acid. In confirmation of this opinion, I may state, that on heating the substance obtained from diseased cartilage over a spirit lamp, a sublimate was obtained which possessed the general characters of benzoic acid. It consisted of very minute needles, rapidly soluble in liquor ammoniæ, and also in ether, to which it communicated an acid reaction.

On comparing this sublimate, side by side, under the microscope, with a sublimate obtained from benzoic acid, itself, no difference could be observed between them.

Two other important observations were made in Coleman's case. The urine, on the day after his admission to hospital, was of a bright amber, transparent, of specific gravity 1·022, and of strong acid reaction. On being allowed to stand, it deposited a light cloud, which scarcely troubled the transparency of the liquid, and which closely resembled the cloud which attends the precipitation of oxalate of lime.

Examined under the microscope, this deposit was found to be made up of extremely minute, bugle-shaped crystals, in some places uniformly scattered over the field, in others closely aggregated into clustered groups. Along with these, there were, also, a few extremely minute octohedra, and a few very delicate rhombic plates.

All these crystals were readily soluble in hot alcohol and in ether. On being exposed to a gentle heat they sublimed without apparent change.

On examining, under the microscope, some mounted specimens of the crystalline mass, formed by the addition of nitric acid to the alcoholic extract of gouty blood-serum, myriads of minute bugle-shaped crystals were seen, so perfectly identical in form and mode of grouping with those which have just been described that it was impossible to resist the impression that they were the same compound.

These crystals, also, were soluble in alcohol, ether, and

boiling water; and on being exposed to a gentle heat, they sublimed without apparent change. Exactly similar crystals, I may add, abound in many other specimens in my possession perpared from gouty blood-serum.

These properties point to benzoic acid—a compound whose presence is rendered readily intelligible by assuming that of hippuric acid in the same situations.

Whatever its nature, the same compound often makes its appearance in the urine, in certain phases of gout, as a single and distinct precipitate.

I have also obtained a substance possessing identically the same characters from gouty cartilage, where it may often be recognised by the microscope as a distinct element of the gouty deposit.

Although these observations are as yet very incomplete, they render it probable that hippuric acid is a frequent, if not an essential ingredient of the gouty matter. They seem to show, also, that the proportion in which this compound exists is subject to wide variation.

ACCOUNT

OF A

GROWTH OF CARTILAGE

IN A

TESTICLE AND ITS LYMPHATICS,

AND IN OTHER PARTS.

BY

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Received May 19th.—Read June 12th, 1855.

I AM indebted to Mr. Skey for permission to publish the following case; and to his house-surgeon, Mr. Stanwell, for notes of the earlier part of the patient's history.

Henry Wynd, a workman in a timber-yard, was admitted into St. Bartholomew's Hospital, under the care of Mr. Skey, on the 5th of January, 1855. He was a temperate man, 37 years old, the father of several children. His only complaint was of a large swelling of the right testicle and spermatic cord. The swelling in the place of the testicle was roundly oval, unequal on its surface, lowly tuberous, perfectly defined. It measured 10½ inches in circumference transversely, was very heavy, in most places almost incompressibly hard; but, in some, especially at its lower and front part, soft and yielding. The scrotum was tightly stretched over it; but not adherent or changed in texture.

Above this mass, the swelling extended up the spermatic cord, which felt very large and firm. At its lower part it measured 7¾ inches in circumference, and from this part it became gradually smaller, but retained its firmness as high as the external inguinal ring. Pressure upon any part of the swelling caused great pain; and frequent very severe pain was felt extending from it up to the loins, where, also, there was tenderness on deep pressure. The patient looked worn with suffering and want of rest; but his general health was not otherwise affected, and no disease of any internal organ could be detected.

The patient had first noticed a slight painless enlargement of the testicle, two years before his admission, at about the same time as he received an injury of the back and right thigh from the fall of a sack of corn. A year after this, the testicle was severely bruised in a fall on an iron bar. It gradually enlarged, and became more painful. In November, 1854, the swelling was punctured, and about three drachms of blood flowed. After this, he had little pain in it, till about three weeks before his admission; but its enlargement continued unchecked. He had never had any venereal affection, and was not aware of any hereditary tendency to tumours.

The local application of mercury and other treatment were without effect, and it became evident, not only that the chief swelling did not decrease, but that the enlargement was quickly extending within the inguinal canal, and that the patient's general health was fail[illegible]. The whole of the diseased parts were therefore remo[illegible] the healthy ings that extended [illegible] inguinal ring.

The patient recov[illegible] and left the hospital [illegible] but apparently free f[illegible] turned, and was re-admi[illegible] become thinner, and much [illegible] exertion, scarcely able to wal[illegible] From this time to his death [illegible]

1st of May, he became gradually thinner and weaker; but, except in being occasionally sick, he showed signs of disease in no organs but the lungs, and in these the chief symptom was increasing breathlessness, such as might be compared with that of a man panting after rapid running. His feebleness prevented his being accurately auscultated; but it was observed that there was diminished resonance on percussion below the clavicles, and in the lower posterior parts of the chest, especially on the right side; that the inspiratory sound below the clavicles was loud and blowing, and the expiratory loud and long; and that over the posterior and lower parts of both lungs a sub-crepitant rhoncus was heard. The heart's sounds were natural.

Directly after the operation, a section was made through the length of the parts removed. It is represented in Plate 1. The mass that occupied the place of the testicle was of nearly oval form, and measured about 3 inches by 2¼. It was smoothly invested with the tunica albuginea, and the thickened and partially adherent tunica vaginalis. It was composed of tortuous, cylindriform, and knotted pieces of cartilage, which were from half a line to two lines in diameter, and were close-packed and imbedded in a tough, filamentous, white, connective tissue. Over parts of the outer surface of this mass, a layer of seminal tubes was thinly spread out between it and the tunica albuginea.

Surmounting this oval mass, and separated from it by a layer of connective tissue, there was a somewhat conical mass, formed of similar but smaller pieces of cartilage. These, also, looked as if imbedded in filamentous tissue; but, on nearer examination, were found to be contained in tortuous and communicating canals, which they tightly filled. The mass they formed was enclosed by a thin layer of fibrous tissue, and, in front, by a kind of tunica vaginalis; the cavity of which, however, was separated from the remains of that around the testicle, by a tough partition.

Above this second mass a series of smaller, oval, and rounded swellings, like a chain of enlarged lymphatic glands, extended along the whole course of the spermatic cord, and

were loosely connected with its structures. The upper ones were, in gradation, smaller and softer than those below them. They were composed, chiefly, of small, cylindrical, and nodular pieces of cartilage, clustered with growths of a softer substance on slender threads, and enclosed in thin-walled canals. These softer structures were the more abundant in the upper swellings; and, in the same gradations, the proportion of the pieces of cartilage clustered with them decreased. In these upper swellings, also, there were many thin-walled cysts, or dilated parts of tubes, filled with colourless or pale yellow, pellucid fluid.

It was thus evident that the disease consisted, chiefly, in morbid growths within canals; and, I supposed, that at least parts of them must be in seminal tubes. But the vas deferens appeared natural, and from it the whole length of the epididymis was traced, ascending at the back of the cartilaginous mass that occupied the place of the testicle. The epididymis was healthy, though stretched; its tube was nowhere dilated; it reached to between the mass last referred to, and the one next above it, and dipping in between them, as if to a 'rete testis,' was lost sight of.

Further dissection showed that the canals containing the morbid growths were lymphatics. Two chief trunks, as large as writing-quills, and filled with clustered growths of cartilage and softer structures, ran by the side of that part of the vas deferens which had lain in the inguinal canal. From both these trunks, branches passed into continuity with the canals containing similar growths, that formed some of the masses above the testicle. Lymphatics, also, from one fourth of a line to a line in diameter, extended up the back of the tunica albuginea, by the sides of and behind the epididymis, to the clustered cartilage next above the testicle. In one half of the specimen four such lymphatics were traced. Parts of each of them were filled with cartilaginous growths; they appeared to emerge from the lower part of the body of the testicle, and to be continuous with the canals filled with cartilage in the mass above it.

Plate 2 shows, in diagram, the relations of the parts just

described. The specimen, from which it is taken, is in the museum of St. Bartholomew's Hospital.

It is already mentioned that, in the cartilaginous growth in the place of the testicle, the pieces of cartilage appeared as if imbedded in filamentous tissue. Their resemblance in shape and plan to the pieces in other parts, makes it, however, nearly certain that they had grown in canals, with the walls of which they had finally coalesced. In the masses above the testicle, it was easy to withdraw the growths from the cavities of the lymphatic vessels, and to see that, in general, they were connected with their walls by only narrow attachments, or by mere threads of tissue. The larger the pieces of cartilage, the more simple and cylindriform their shape, the more extensive was their connection with the walls of the vessels containing them, and the less the mixture of other textures with them. In many places, and especially in the lymphatics most distant from the testicle, the growths were arranged in clusters or bundles of small bodies, from half a line to two lines in diameter, of pyriform, oval, and various other shapes, which were attached to each other, and to the walls of the lymphatics, by slender pedicles and long branching filaments. Their connections were, in some instances, so slight that, when a lymphatic was cut across, they could be pressed out of it, as if they had lain loose in its cavity, (many had been thus pressed out of a vessel divided in the operation.) In other instances, again, when a large lymphatic was laid open, its canal appeared filled by a firm cylindrical growth; but such a growth could be loosened and unravelled into a bundle of variously-shaped small bodies, suspended, as it were, on long branching stems, and consisting, usually, of nodules of cartilage imbedded in a softer tissue. Two such clusters, from specimens in the museum of St. Bartholomew's, are shown, unravelled, in Plate 3.

The blood-vessels, and all the other structures, among which these growths were placed, appeared quite healthy.

From this naked-eye examination, one might describe the disease as consisting in, first, a growth of cartilage within the body, or "rete" of the testicle, and, probably, within the lymphatics of the gland; secondly, a growth of cartilage,

and of filamentous and other structures, in the lymphatics extending from the testicle along the spermatic cord; a growth so dilating and elongating certain parts of them, that, in their enlargement and tortuosity, they were clustered and compacted, so as to form a series of tumours, like a chain of diseased lymphatic glands; thirdly, dilatations of parts of the lymphatics into cysts filled with pellucid fluid.

The microscopic examination confirmed this description; but I defer speaking of it till I have described the continuity of the disease traced after death.

From the uppermost part of the scar of the operation-wound, which reached, as already stated, to the internal inguinal ring, two dilated and tortuous lymphatic vessels passed upwards and backwards with the spermatic blood-vessels. They were filled with growths, like those in the lymphatics of the spermatic cord, which greatly enlarged them, and adhered to their walls. At their upper part they became connected with a swelling, of the size and shape of a hen's egg, which, on section, presented numerous chambers, or cavities, filled with pellucid fluid, and partitioned by fibrous and cartilaginous textures. Both this swelling, which was probably formed by a diseased lymphatic gland, and the lymphatics connected with its exterior, adhered closely to the front of the lower part of the vena cava inferior, and reached nearly to the origins of the renal veins.

Beyond this point no affection of the lymphatic system could be traced. The thoracic duct was healthy, and so were even the lymphatic glands of the lungs.

But where the lymphatics above described adhered to the vena cava inferior, a cartilaginous growth projected from one of them into the cavity of the vein. The growth was branched, like a stunted, leafless shrub, about two-thirds of an inch high. The coats of the vein were reflected on its narrow base; but, gradually thinning, were lost on many of its branches, which thus appeared bare, and in direct contact with the venous blood.[1] Except in being reflected on the

[1] This specimen is also in the Museum of St. Bartholomew's. It is represented in Pl. 4.

growth, the coats of the vein had undergone no change. A small tuft-like, isolated growth of cartilage was attached to the inner coat of the vein, near the origin of one of the renal veins; and a smaller one, scarcely more than a filament, lower down; but, with these exceptions, all the rest of the vena cava inferior, as well as all the other veins that were examined, appeared healthy alike in structure and contents.

The only other evidently diseased parts were the lungs. Both of these were enlarged by the formation in them of masses of cartilage, in such abundance that the two lungs together weighed $11\frac{1}{2}$ pounds. These growths varied in size from less than a line to an inch and a half in diameter; they were generally either cylindriform, or nearly spherical, lobed and nodular; they lay embedded in the healthy pulmonary structure, from which, though they were closely connected, they could be easily and almost cleanly shelled-out. They were scattered irregularly, but pretty equally in all parts of both lungs.[1]

In many of the larger branches of the pulmonary artery, small, shrub-like growths of cartilage, like that in the vena cava inferior, were attached to the lining membrane; but they appeared to have sprung from the membrane, or to have grown on it, not (as in the case of the vein) to have been protruded through it. The abundance of the cartilaginous, nodular growths made it difficult to trace the smaller branches of the pulmonary artery; but I found many of these growths arranged in clusters, corresponding with branches of the artery, and connected by short portions of the branches collapsed and empty between portions dilated by the growths within them. Moreover, in some instances, the walls of small arteries could be distinctly traced, stretched over masses of cartilage; and in some, where the contained growths were small, it could be seen that they were formed on the same plan as those in the lymphatics, mingled with filamentous and nucleated structures, by which, as on pedicles, some of the minute nodules of cartilage were supported and ensheathed.

[1] The left lung is in the Museum of the College of Surgeons.

No similar growths were found in the pulmonary veins, or in the costal pleura, or in any other part near the lungs.

With the help of Mr. Jowers, every other internal organ was carefully examined, but none was found diseased.

The morbid structures were thus limited to the right testicle, its lymphatics, the vena cava inferior, and the branches of the pulmonary artery.

Microscopic examinations of portions of nearly every part of the disease, led to the following results:

1. The pellucid liquid that filled the cysts, or portions of lymphatics, in the spermatic cord, contained no corpuscles but those of blood, which were, doubtless, accidentally mingled with it in collecting it. In the similar liquid from some of the cavities in the lumbar gland, and in that from a similar small swelling lower down in the course of the lymphatics, there were a few pale, spherical, nucleated, small cells, like cells of common lymph, and with these a few films apparently of fibrine. I think it, therefore, nearly certain that these liquids were lymph; detained, perhaps, in the dilated vessels by the growths obstructing them.

2. The cartilage, in every seat of its growth, was of the true or hyaline kind; and, in various specimens, appeared to differ only according to the degrees of its development. It was thus, in different degrees, soft or very firm; colourless, pellucid, bluish or yellowish-white, or opaque, but, for by far the most part, it was such firm cartilage as might be compared with the epiphyses of growing bones, or with the adult respiratory cartilages. Generally, it had a firm, pellucid basis, or intercellular substance, in which the cells or cavities were exceedingly thick-set. The cells, whether simple or compound, were various in shape, but generally small; many of them contained one or two glistening oil-particles. An average specimen, from the lungs, is sketched in Pl. 5, fig. 1.

In many instances there appeared, at the centre of the transverse section of a cylindriform piece of cartilage, in the testicle, or in the swelling next above it, a small opaque, yellowish, or reddish spot, like a centre of ossification. But

I could find no bone; the spot appeared to be due to yellowness of the intercellular substance. In some specimens, however, the cells at this spot had a partially radiate linear arrangement, as in a costal cartilage in commencing ossification.

In the less firm specimens of cartilage, and in those which were scarcely firmer than jelly, there could be found, I think, all the gradations of the development of cartilage; from the clustering of cells, like the common embryo-cells, in a molecular blastema, onwards to the perfect structures. But it would be out of place to describe these here. I will only say, that I found no structures which might not fairly be regarded as cartilage in some state; none, of which a suspicion of cancer could be entertained.

3. The opaque-white and softer structures with which, in various shapes and plans, the cartilage was clustered in the lymphatics high up in the spermatic cord, and in some branches of the pulmonary artery, showed, generally, a filamentous and nucleated substance. Many of these growths had a minutely lobed, acinous, or foliated appearance; many were like the minutest villi of the fringes on synovial membranes; all appeared to be connected together, and with the walls of the lymphatics, by threads of structures similar to their own. Two chief structures were found in all. The axes of the connecting threads, and the central substance of the growths which they supported, were composed of a densely nucleated substance; their exterior, of a substance that looked filamentous. The whole structure appeared as a nucleated blastema ensheathed in filamentous tissue. (See Pl. 5, fig. 2.)

The nucleated substance had a yellowish basis, which appeared homogeneous, or sprinkled with minute particles, like oil-molecules. The nuclei in it were very thickly set, oval, or elongated, small, with distinct outlines, made more distinct by acetic acid, without nucleoli. The investing filamentous-looking substance showed, in some instances, a finely undulating lineation, as if formed of perfect connective tissue; but, more generally, its filamentous appearance

was due to its being composed of very attenuated caudate and fusiform corpuscles, arranged in nearly parallel and mutually adapted series. Such corpuscles are sketched in Pl. 5, fig. 3. They were very pale, their nuclei indistinct, as if fused with their cell-substance; their ends sometimes short and sharp, sometimes extremely elongated; they were so closely compacted that it was difficult to detach them.

The small nodules of cartilage, which were in the same clusters with these lobed and villous growths, were ensheathed and suspended by similar filamentous tissues. Their arrangement is shown in Pl. 5, fig. 4, in which a torn pedicle is sketched in continuity with the capsule of a minute portion of cartilage. The boundary line between the cartilage and the filamentous tissue thus investing it, was always well defined.

Moreover, on some of these lobular and acinous growths, there were corpuscles like those of a cylindriform epithelium, which seemed to cover the whole surface of a nucleated or molecular substance.[1] (See Pl. 5, fig. 5.)

4. In the structures of the diseased lymphatic gland I found cartilage and other textures, such as I have just described; but they were so confused with the natural and the altered structures of the gland itself, that I could not satisfactorily unravel them. Certainly, however, there were no cancerous materials mingled with them.

5. In blood from the right side of the heart I could see nothing but natural fibrine and corpuscles; no appearance of any such structures as composed the morbid growths.

The case just detailed is, I believe, in many respects unique; but it is not so much for its singularity, as for its utility in illustrating some points of general pathology, that I have brought it before the Society. To some of these illustrations I would now direct attention.

1. The growth of cartilage, either alone, or in combination

[1] Mr. Curling ('Med. Chir. Trans., xxxvi, p. 452) mentions growths in cysts in a testicle which were found by Mr. Quekett to be covered with cylindrical epithelium.

with fibrous tissue and cysts, or with medullary cancer, in the testicle, is not rare. We owe to Mr. Curling the discovery that in many of these cases the nodules of cartilage grow within dilated tubes, and, probably, most frequently in the ducts of the rete testis. The present case may suggest that, in at least some instances, they have their primary seat in the lymphatics of the testicle; and the suggestion is supported by the frequent occurrence of cartilage in tumours that seem to have their origin in lymphatic glands in or near the parotid and submaxillary glands, and in other parts.[1] It will be desirable, in all future cases of cartilaginous tumours in soft parts, to ascertain their relation to the lymphatics of the part.

2. It is interesting to observe the manner of the growth of the cartilaginous and other structures in the lymphatics and blood-vessels. It affords a good example of that dendritic plan, upon which morbid growths are usually produced into cysts and other free spaces, but which can be so rarely seen in growths confined within the narrow limits of minute canals. The natural structures most nearly imitated in these growths are the synovial fringes, and other similar outgrowths of membranes. The resemblance is, indeed, very striking, especially in a comparison of the nodules of cartilage ensheathed and suspended by filamentous tissue (Pl. 5, fig. 4) with the synovial villi enclosing cartilage cells, which Kölliker first described.[2]

3. In their method, as well as in their component elements, these morbid growths were manifestly "homologous." Yet in their multiplicity, and their distribution, they resembled the most "heterologous" cancerous productions. In this is the chief practical interest of the case.

Two views may be taken in explanation of the distribution

[1] See especially specimens in the Museums of the College of Surgeons and St. Bartholomew's Hospital, delineated in my 'Lectures on Surgical Pathology,' vol. ii, pp. 184 and 209. I have no doubt, now, that in the case from which they were taken the cartilage was in lymphatic vessels.

[2] 'Mikroskopische Anatomie,' b. ii, p. 324, fig. 102.

of the disease. It may be regarded as the result of a disease of the blood, manifesting itself in morbid growths, first in one locality, and then in many others independent of the first. But it seems a much more probable account of the distribution and multiplicity of the growths, that, from its first locality in the testicle, the disease was propagated into the lymph and blood. This explanation, indeed, seems nearly proved by the facts that growths were found only where materials could be carried from the testicle by the simple route of its lymphatics and the venous blood, and that the growths were not formed in any lymphatics beyond the point at which, in the vena cava inferior, they came into direct contact with the venous blood.

In this view, the case presents the most probable instance I have yet known, of (to use a general expression) "a local disease becoming constitutional." The local origin and maintenance of those tumours in the testicle, that contain cartilage without cancer, are well established by the many cases in which no recurrence of the disease has followed their removal, as well as by the cases in which cancerous growths, being combined with the cartilaginous, the recurrent disease has contained cancerous structures alone.[1] In this instance, however, we must assume that the local cartilaginous growth, extending into the blood, infected it.

4. The quantity of cartilage formed in the lungs gives a striking illustration of the enormous power of multiplication and increase of such structures, when in free contact with the blood. It may be estimated that, from the germs (if we may so call the material in whatever form) derived from the small growth that projected into the vena cava inferior, nine pounds of cartilage were developed in less than three months.

5. Lastly, while the case thus shows the immense power of increase of morbid materials in the blood, it shows also very evidently, though it does not explain, how perfectly such materials may be arrested or changed in the circulation through the lungs. Not a portion of morbid cartilage could be found in any part to which the blood from the vena cava

[1] 'Lectures on Surgical Pathology,' vol. ii, p. 208.

would be carried after traversing the lungs. I could find no support for the explanation of this and similar facts, by supposing that the corpuscles of the morbid materials are arrested in the pulmonary capillaries, because they are too large to traverse them. I could find no cartilage-cells, conspicuous as they would have been, in the blood in the right side of the heart; and the nuclei of the softer structures, as well as the blastema of both them and the cartilage, might certainly have passed with blood-cells through the pulmonary capillaries, if size of particles alone determined the possibility of transit. By its negations, then, I think this case adds to the probability that the immunity which organs placed beyond the lungs enjoy, from the influence of certain morbid materials added to the venous blood, is due to chemical changes effected after the reception of oxygen in the lungs,—changes which may alter either the morbid materials themselves, or the substances on which they depend for their maintenance and increase.

CASES

ILLUSTRATING THE

PATHOLOGY OF MANIA AND DEMENTIA.

BY

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THE pathology of insanity is so extensive a subject of inquiry, that it is not adapted to the limit usually assigned to papers read before the Society; I felt, therefore, that it was necessary to select only a portion of the subject; and as I was precluded from offering any remarks upon the morbid anatomy of insane patients, on account of the valuable papers of Dr. Webster, printed in the 'Transactions' of the Society, and because I had already published the results of my post-mortem examinations in the 'Medical Gazette,' I considered that it might not be uninteresting to the Fellows of the Society, if I laid before them the analysis of the mixed phosphates of the urine in cases of mania and dementia, (which was undertaken at my request by Dr. Beale, of King's College,) and if I were to compare it with the evidence of the pathology of these diseases which we derive from other sources.

It is necessary to premise that in these analyses the following method was pursued. After the reaction which each specimen exhibited had been noticed, and the specific gravity taken, 500 grains of the urine were evaporated to

dryness over a water-bath, and the dry residue was exposed over sulphuric acid *in vacuo* for several hours, when it was carefully weighed: the weight being multiplied by 2 gave the quantity of solid matter in 1000 parts. A weighed portion of the dry extract was incinerated, and perfectly decarbonized, the saline residue was weighed, and the proportion of salts existing in the total quantity of solid matter calculated from the results of experiment.

Another portion of urine, consisting of 1000 grains, was poured into a glass, and a quantity of solutions of chloride of calcium and ammonia were added, sufficient to precipitate the whole of the phosphoric acid as phosphate of lime. After standing for six hours, the glass being covered to exclude the air, the precipitate was thrown on a filter, well washed with water, dried, and ignited, and when the ash had become nearly white it was weighed. The proportion which the amount of salts and phosphate bore to 100 grains of solid matter was then calculated, in order that the results of each analysis might be compared with the rest. A comparison may be made between the results obtained in each case, quite independent of the variations in density of the several specimens examined.

It is quite true that no accurate comparison can be made, unless the whole quantity of the urine passed in the twenty-four hours be obtained, and a specimen of this submitted to analysis; but in by far the greater number of cases, more especially in those of insanity, this is quite impossible, and it is also equally difficult to obtain specimens from the various patients at any particular time of the day; the only method, therefore, by which accurate conclusions can be deduced from the results of experiment is by comparing the quantities of phosphate corresponding to 100 grains of the solid matter present in each specimen of urine. I have, however, given both results in the following tables; but in order that I might compare them with those of Dr. Bence Jones, I have referred to the first table in the remarks which I have made as to the amount of phosphates found in the different cases. I might have strengthened my case had

I referred to the other table; for if the proportion of phosphate to 100 grains of solid matter be compared with the symptoms existing at the time of the analysis in the different cases, we shall find that a larger proportional amount of mixed phosphates was shown by Table II, to have existed in cases of acute mania. I might also have referred to Table II in the cases of J. H. and J. W., patients suffering under general paralysis, but I have found that where the specific gravity is very low, as in the case of J. H., where it was only 1008, the first table is rather to be relied upon.

The great source of fallacy in the quantitative analysis of the phosphates in the urine originates in variations of diet, particularly in the quantity of bread taken at meal-time, which contains a large proportion of alkaline phosphates; but in an hospital where all the patients have the same diet, this fallacy is avoided.

The ordinary diet of the patients in St. Luke's Hospital, at the time the analysis was made, was as follows:—For male patients, 2 pints of milk-and-water gruel, and 2 oz. of bread for breakfast: 12 oz. of cooked meat, 12 oz. of potatoes, and 6 oz. of bread, and 1 pint of beer for dinner; 8 oz. of bread, 2 oz. of cheese or butter, and 1 pint of beer for supper. For females, 1½ pint of milk and gruel, and 2 oz. of bread for breakfast; 8 oz. of cooked meat, 8 oz. of potatoes, and 6 oz. of bread, and ¾ of a pint of beer for dinner; 8 oz. of bread, 2 oz. of cheese or butter, and ¾ of a pint of beer for supper. It will be seen that the allowance of bread was the same for males and females.

It is necessary for me to give an outline of the cases, and to state that the urine was selected from patients labouring under different forms of the disease in the following proportions, viz.: 5 cases of acute mania with paroxysms, 4 of common mania, 2 of intermittent mania, 1 of remittent mania, 2 of hysterical mania, 3 of puerperal mania, 5 of acute dementia, 1 of acute dementia with catalepsy, 5 of paralysis of the insane, 3 of chronic mania, and 3 of chronic dementia; making in all 34 cases.

CASES OF ACUTE MANIA, WITH PAROXYSMS.

No. 21.—R. E—, male, æt. 18, single, without occupation; admitted into St. Luke's May 23d, 1851. The present is the first attack, and has lasted three months; the disease is not hereditary. Cause, meningitis.

Symptoms on admission.—Temperament, nervo-lymphatic. Manner, excited and restless. Conduct, mischievous and destructive. Conversation, incoherent.

Bodily condition.—He is very weak and emaciated. Complexion bloodless; pulse 84, weak; skin and head cool; tongue clean; bowels open; sleeps well; appetite good.

Ordered to take equal parts of the compound mixture of iron and camphor mixture twice daily. Ordinary diet.

May 27th.—When the analysis of the urine was made, the symptoms were the same, and the medicine was continued.

Result.—Aug. 29th, 1851. Discharged cured.

No. 24.—R. B—, female, æt. 55; wife of a farmer; two children; admitted May 23d, 1851. The present is the first attack, and has lasted three months. The disease is not hereditary; its cause unknown. Habits steady; can read and write well.

Symptoms on admission.—Temperament bilious; manner restless and peculiar. She is garrulous and incoherent, unable to sustain conversation, showing deficiency of mental power.

Bodily condition.—Pulse 72, weak; skin and head cool; tongue clean, with irregular fissures; bowels open; urine acid and turbid, with copious deposit of urate of ammonia: catamenia have ceased; countenance excited; complexion sallow; pupils much contracted; increased impulse of heart; anæmic murmur with first sound; expiration audible on left side of thorax.

Ordered one fluid drachm of the solution of bichloride of mercury, one and a half fluid ounce of compound tincture of bark in distilled water three times daily; ordinary diet.

May 27th.—When the analysis of the urine was made, the symptoms were the same, and she was taking the same medicine.

Result.—September 19th, 1851. Discharged cured.

No. 47.—G. G—, male, æt. 26, single; a cabinet-maker: admitted June 27th, 1851. The present is the first attack, and has lasted six days. The disease not hereditary; its cause unknown.

Symptoms on admission.—Temperament nervous.

Bodily condition.—Pulse 120, very weak; surface cold; head warm; countenance excited, but with a vacant stare; complexion anæmic and dusky: there is much exhaustion and emaciation. He weighs 7 st. 12 lb.

Ordered half a grain of morphia at bedtime. Diet, beef tea and wine.

Habits, dirty at night; he has exhibited some violence, and is suspicious of every one; he has been fed with some trouble; he is restless at night.

June 30th.—When the analysis of urine was made, he was quieter, and took his food more readily. The morphia, beef tea, and wine, were continued.

Result.—Oct. 8th, 1852. Discharged uncured.

No. 49.—E. A—, female, æt. 18, single; admitted June 13th, 1851. The present is the second attack, and has lasted fourteen days. The disease not hereditary; its cause unknown. Habits steady; disposition cheerful; educated for a governess.

Symptoms on admission.—Extremely maniacal and restless; constantly talking in an incoherent manner; mischievous.

Bodily condition.—Pulse 100, almost imperceptible; head hot; skin dry; complexion pale and dusky; countenance very excited. She is very weak and emaciated; weighs 6 st. 6 lb.

Ordered half a grain of morphia at night, four ounces of wine daily.

June 30th.—When the analysis of the urine was made she was less mischievous; she took her food well; and had continued to take the morphia and wine.

Result.—December 12th, 1851. Discharged cured.

No. 51.—J. C—, æt. 19, male; single; a blacksmith; admitted February 21st, 1851. Form of disease, acute mania. The present is the first attack, and has lasted eleven months. The disease is hereditary; his father and grandfather were insane. Habits very steady; disposition cheerful. The cause of the disease unknown.

Symptoms on admission.—Temperament sanguine. He is now quiet. Countenance heavy and stupid; sleeps well; he is clean in his habits.

July 4th.—He was attacked suddenly with a paroxysm; he fancied two bullets were shot into his head; that he pulled them out of his body, and put them in his pocket; also, that those about him were devils: had visions, and was noisy at night: now dirty in his habits. The analysis of the urine was made the day after the paroxysm broke out, and while it was at its height; he had ordinary diet.

Result.—Dec. 19th, 1851. Cured.

No. 58.—W. M—, male, æt. 21, single; a shopman; admitted June 27th, 1851. Form of disease, intermittent mania. The present is the first attack: it has lasted some days.

Symptoms on admission.—Temperament, nervo-sanguine; bodily health pretty good; complexion florid; countenance rather excited; manner restless; nights disturbed by dreams; pulse weak; bowels costive; habits clean; spermatorrhœa; complains of pain in the back and head; at times feels heavy and giddy.

July 12th.—Having gone on quietly since his admission, to-day he became excited, and had a paroxysm which lasted three weeks.

15th.—The urine was analysed when the paroxysm was at its height.

He had the ordinary diet of the hospital.

Result.—Aug. 20th, 1851. Cured.

No. 4.—W. B—, male, æt. 52, married; occupation an excise officer; admitted October 25th, 1850. Form of disease, at first melancholia; afterwards intermittent mania.

Symptoms on admission.—Temperament melancholic; extreme depression, with a strong suicidal tendency; pulse 120, very weak; the extremities and head cool; tongue clean; bowels costive; urine acid, scanty, and high-coloured; complexion swarthy; conjunctiva yellow and injected; pupils natural; beating of carotids natural; breath sour; sounds of thorax and heart natural: the liver slightly enlarged; some tenderness over the hepatic region.

Ordered blue pill and morphia every night; a senna draught every alternate morning; ordinary diet.

Jan. 6th, 1851.—He had a paroxysm of mania, and was very violent.

March 3d.—The paroxysm returned, and lasted till June 2d, *i. e.*, three months.

Result.—He was discharged uncured.

Cases of Common Mania.

No. 34.—W. M—, male, æt. 68, a widower; occupation, a coachman; admitted May 9th, 1851. The present is the first attack, and has lasted three weeks. Cause of the attack, intermittent fever.

Symptoms prior to admission.—He laboured under the delusions that he was possessed of a large estate, and that there was a conspiracy against him. He had attempted to kill his medical attendant.

Symptoms on admission.—Pulse 100; skin and head cool; tongue clean; bowels costive; urine scanty; complexion sallow; conjunctiva injected; pupils unequal; appetite bad; dyspeptic; liver enlarged, felt below the umbilicus; has a severe rupture.

He was ordered a draught, with taraxacum, soda, hydrocyanic acid in peppermint water. Diet, beef tea and arrowroot.

Result.—He was discharged uncured.

No. 40.—E. T—, male, æt. 23, a shoemaker, single; admitted June 6th, 1851; he has recently become a Mormonite. The present is the first attack, and it has lasted five weeks; the disease is hereditary: his maternal grandmother and uncle were insane.

Symptoms on admission.—Temperament nervous; bodily health very weak; pulse, 100; skin and head cool; tongue white; bowels costive; urine free; refuses food, obliged to be fed.

Ordered to inhale a drachm of ether three times daily, and to take half a grain of morphia at night. Ordinary diet.

He throws himself on the floor, and holds his breath; and bends his body so as to produce opisthotonos; in this posture he will remain till the face becomes turgid, and blood issues from his mouth and nose.

Result.—He was discharged uncured.

No. 58.—E. H—, male, æt. 32, a tailor; single; admitted July 4th, 1851. The present is the first attack, and has lasted a fortnight; habits steady; cause disappointment in his affections: the disease is hereditary, his paternal aunt was insane.

Symptoms on admission.—Temperament nervous; great emaciation; pulse 96, weak; tongue dry, with fissures; bowels costive; urine free; skin and head cool; complexion rather swarthy; conjunctiva injected; liver enlarged, felt almost to the umbilicus; sounds of thorax and head natural.

To have ordinary diet. He was ordered to take five grains each of blue pill and extract of henbane every night, and senna and salts every alternate morning.

July 15th.—When the analysis of the urine was made he was taking the above pills; his appetite was bad; he slept

little; his conversation was incoherent; there was no paroxysm.

Result. — December 5th, 1851. He was discharged cured.

No. 32.—S. H—, female, æt. 33, married; has seven children, youngest aged ten months; admitted March 14th, 1851. The present is the first attack, and has lasted one month. Cause, lactation and anxiety of mind; habits steady; the disease is hereditary; her sister is insane.

Symptoms on admission.—Temperament bilious; pulse 80, almost imperceptible; skin cool; head cool, irregularly shaped; Malay face; tongue white; bowels open; urine free; catamenia absent; countenance anxious; complexion sallow and bloodless; conjunctiva and pupils natural. She is very weak, speaks little, but is excitable and rambles in conversation; sleeps pretty well.

She was ordered infusion of cascarilla and camphor mixture, of each six drachms three times daily.

June 2d.—When the analysis of the urine was made, she was silent; stood for hours together in the same place, and was much lost and stupid. Had ordinary diet.

Result.—August 22d, 1851. Discharged cured.

No. 36.—M. D—, female, æt. 49, married; has two children; admitted May 30th, 1851; formerly a lady's maid. The present is the second attack, and has lasted ten days. Cause unknown; disease not hereditary; incoherent; violent; habits dirty; does not sleep well; refuses food.

Symptoms on admission.—Temperament nervous; bodily health very weak; countenance and manner much excited; mischievous and noisy at night. Pulse 120, extremely weak; head warm; tongue dry and brown; complexion sallow and pale.

Ordered half a grain of morphia at night, and four ounces of wine daily; beef tea and milk diet. Form of disease, remittent mania.

June 9th.—When the analysis of the urine was made, she was cleaner in her habits.

She took the half-grain of morphia every night. She had ordinary diet, and no longer refused food.

Result.—Discharged uncured.

Cases of Puerperal Mania.

No. 14.—C. P—, æt. 22, wife of a farmer; has two children, youngest aged 8 months; admitted May 9th, 1851. The present is the first attack. She has been "strange" ever since her confinement, and violent for the last three weeks. Her mother died insane; her father is insane; her habits have been steady.

Symptoms on admission.—Says that she has had a revelation from heaven; at times incoherent. Pulse 108, very weak; skin and head cool; tongue clean; bowels costive; urine free; conjunctiva injected.

Ordered M. Sennæ cum Jalapæ, ℈ss, every morning.

May 20th.—The analysis of the urine was made eleven days after admission, and four weeks and a half after the excitement was stated to have commenced. She fancied at this time that she saw her mother every night.

Ordinary diet.

Result.—June 20th, 1851. Cured.

No. 30.—S. P—, æt. 29, single; has two children, youngest aged three months; admitted April 25th, 1851. The present is the first attack, and has lasted ten weeks, it came on seven days after lying-in; the disease is not hereditary; she has been incoherent and violent for two months. She tore her clothes, and was dangerous to her child.

She was ordered Morphiæ Acet., gr. ½ every night, and four ounces of wine daily, at the time of her admission.

Symptoms on admission.—Pulse 96; hands cold as ice; very destructive.

June 2d.—The analysis of the urine was made nine weeks after her admission, and nineteen weeks after the attack

commenced. She was taking Misturæ Ferri Comp., ℥iss, ter die; and her diet was the ordinary one of the hospital.

Result.—November 28th, 1851. Cured.

Case after prolonged Lactation.

No. 50.—A. C—, æt. 32, wife of a clerk; has two children, youngest aged fourteen months; admitted March 7th, 1851. The present is the first attack, and it has lasted seven days; the disease is not hereditary.

Symptoms on admission.—She is very weak and emaciated; conversation incoherent; she refuses food; she is inattentive to the calls of nature; sleeps little; tears her clothes.

July 5th.—The analysis of the urine was made. She was taking two ounces of brandy, and two pints of porter daily, with ordinary diet; and there was no alteration in the symptoms, except that she no longer refused her food; she also took half a grain of morphia every night.

Result.—Uncured.

Cases of Hysterical Mania.

No. 55.—A. G—, female, æt. 20, single; a servant; admitted June 20th, 1851. The present is the second attack, and has lasted a fortnight; the disease is hereditary; her father died insane. Cause, disappointment in her affections.

Symptoms on admission.—Temperament sanguine; pulse 96, weak; skin and head cool; tongue white, with raised papillæ; bowels open; urine free; catamenia regular; sounds of thorax and heart natural; much flatus abdominis; manner excited; noisy at night; destroys clothes; conversation incoherent; behaviour immodest.

She was ordered to take half a grain of morphia every night, and a shower bath three times a week. Also one drachm of the ammoniated tincture of valerian in peppermint-water three times daily; and ordinary diet.

Result.—November 21st, 1851. Discharged cured.

No. 28.—E. W—,æt. 19, female, single; a weaver, works eight to twelve hours in the day; admitted May 23d, 1854 The present is the first attack, and has lasted six weeks Cause, overwork, and disappointment in her affections.

Symptoms on admission.—Temperament nervo-lymphatic; pulse 72, weak; skin cool; head warm; bowels open; urine free; catamenia present; complexion bloodless; mucous rattle on both sides of the thorax; cough, with mucous expectoration; conversation incoherent; language disgusting; conduct lascivious; inattentive to the calls of nature; restless and noisy at night.

Ordered to take half a grain of morphia every night, and four ounces of wine daily. Ordinary diet.

June 2d.—When the analysis of the urine was made, she was less anæmic; her habits were clean; she took her food well; the pulse was 68, and stronger; and she continued to take the wine and morphia.

Result.—December 12th, 1851. Discharged cured.

Cases of Acute Dementia.

No. 52.—Madame E. A—, æt. 30, married; no children; admitted June 20th, 1851. The present is the first attack, and it has lasted two months. Cause unknown; disease not hereditary.

Symptoms on admission.—Temperament lymphatic; pulse 100, very weak; skin has a strong, disagreeable smell; an oily secretion oozes from the sebaceous glands; complexion bloodless; pupils unequal; muscular system atonic; mind much lost; inattentive to the calls of nature; obstinate; it is difficult to make her move, or to get her out of bed; catamenia present; sleeps well; os frontis receding.

Ordered ordinary diet, with a pint of porter daily.

Result.—Discharged October 29th, 1852, uncured.

No. 6.—J. L—, male, æt. 17, single; a weaver; admitted April 25th, 1851. The present is the second attack,

and has lasted twelve weeks. Cause, overstudy; the disease is hereditary; father insane.

Symptoms on admission.—He is incapable of answering questions, and is inattentive to the calls of nature; pulse 92, very weak; skin and head cool; tongue white; bowels open; complexion bloodless; anæmic murmur with carotids, and with first sound of heart; sleeps well.

Ordered to take equal parts of compound steel mixture and camphor mixture twice daily. Ordinary diet; a pint of porter daily.

May 10th.—When the analysis of the urine was made, the symptoms were the same as when he was admitted. He took the mixture thrice daily.

20th.—Improved; more conscious of what is passing around him.

Result.—September 19th, 1851. Discharged cured.

No. 18.—T. T—, male, æt. 21; a compositor; admitted January 31st, 1851. Cause of the disease unknown.

Symptoms on admission.—Pulse 80, not weak; skin cool; head warm; tongue clean; bowels open; urine free; countenance vacant; complexion sallow; acne on forehead; hands blue; nervous palpitation of the heart; remains in one position for some time.

He was ordered to take the tincture of the sesquichloride of iron, and chloric ether, of each twenty minims in camphor mixture thrice daily. Ordinary diet.

May 27th.—There was no improvement in the symptoms; he was taking three grains of quinine three times a day.

July 15th.—Some improvement, but the mind is at times weak.

Result.—February 6th, 1852. Discharged uncured.

No. 31.—M. A. M—, female, æt. 22, single; a silk-winder; admitted May 2d, 1851. The present is the first attack, and has lasted two months. Cause unknown; her maternal grandmother was insane.

Symptoms on admission.—Temperament nervo-sanguine; pulse very weak; skin cold: catamenia absent last period.

Ordered extra diet, and four fluid ounces of wine daily; and a draught containing three fluid drachms of compound tincture of cinchona, and twenty minims of chloric ether, three times a day, and a warm bath every other night.

Countenance vacant; pupils dilated; conversation incoherent; appears to apprehend very imperfectly what is said to her; imbecile; restless, and wet at night; requires to be fed.

June 2d.—When the analysis of the urine was made, the mental condition was the same; her health had improved; she took her food better; and was clean at night.

Result.—May 7th, 1852. Discharged uncured.

No. 35.—C. B—, female, æt. 22, married, (three months since); admitted May 30th, 1851. The present is the first attack, and commenced fourteen days after marriage; her paternal grandfather was insane.

Symptoms on admission.—Temperament lymphatic; pulse very weak; catamenia absent, and did not appear till four months after admission; bowels costive; complexion anæmic; extremities cold; quite taciturn; saliva runs out of the mouth; inattentive to the calls of nature; appearance quite demented; requires to be fed. Sits in one place with her chin resting on her chest.

She was ordered four fluid ounces of wine daily; diet, beef tea and arrow root, and a draught containing three fluid drachms of compound tincture of bark, and twenty minims of chloric ether, thrice daily, and aperient medicine.

June 2d.—The analysis of the urine was made.

30th.—The analysis of the urine was repeated, when her habits were very dirty, and the drivelling continued. She was now taking the compound steel mixture and camphor mixture, of each six fluid drachms, and seven fluid ounces of brandy instead of the wine. She remained quite inanimate, unable to understand what was said.

Result.—February 20th, 1852. Discharged cured.

Acute Dementia with Catalepsy.

No. 64.—H. J—, æt. 22, single; shoemaker; admitted January 28th, 1853; religion, a Jew. The present is the second attack, and has lasted two months. Cause, masturbation; the disease is not hereditary.

Symptoms on admission.—He appears only partly conscious of what is passing around him; he is incapable of conversation, but he occasionally utters short sentences with effort; he is subject to a variety of apparently automatic movements. Pulse 100, very weak; hands cold, firmly clenched, and purple; forehead warm; eyes closed; chin resting on his chest; anæmic systolic murmurs of the heart; respiration sometimes 28 in the minute, sometimes very slow, as if he held his breath; urine acid, 1020, not albuminous. He was at one time constantly drivelling. The saliva was feebly acid, rather turbid, viscid, and could not be made to drop. It consisted of

Water	990·22
Solid Matter	7·60
Fixed Salts	2·18

The presence of sulpho-cyanide of potassium could not be detected.

May 11th.—When the analysis of the urine was made, the symptoms remained the same; he was taking one twentieth of a grain of strychnine three times a day, and had an ointment with strychnine rubbed down his spine every night; and he had ordinary diet.

Result.—Uncured.

Cases of Paralysis of the Insane.

No. 1.—F. B—, male, æt. 36, married; a cabinet maker; admitted October 11th, 1850; the disease is not hereditary. The present is the first attack, and has lasted two months.

Symptoms on admission.—Pulse 84, weak, skin and head cool; tongue white; bowels open; urine free, acid, specific gravity 1029, turbid, with broken epithelial deposit. There was thickness and hesitation of speech, and tremor of the upper lip; the pupils were unequal.

Ordered salts and senna every other morning. Ordinary diet.

May 3d.—When the quantitative analysis of the urine was made, the symptoms were much the same; he had only upon one occasion spoken of having immense wealth, but he says that he never felt better in his life. The right pupil was still dilated.

June 9th.—The urine was again examined, and he was improved, and made himself very useful.

Result.—November 21st, 1851. He was discharged cured, at which time the asynchronous action of the pupils had ceased.

No. 2.—J. C. T—, æt. 45, single; a blacksmith; admitted January 31st, 1851. The present is the first attack, and has lasted one month. Cause unknown; habits stated to be steady.

Symptoms on admission.—Temperament nervous; pulse 80, weak; skin and head cool; tongue clean, with fissures; bowels open; urine free; left pupil dilated; dulness on percussion of left side of the thorax; sounds of heart natural; says he is prime minister, a judge, Emperor of France, perpetual chaplain to the Queen, and has ninety tons of gold; countenance elated; spirits excellent.

He was ordered to take one fluid drachm of the solution of bichloride of mercury, three fluid drachms of compound tincture of bark, in an ounce of camphor mixture, twice daily. Ordinary diet.

May 3d.—When the quantitative analysis of the urine was made, the symptoms were the same. He fancied he had all the money in England; and he was taking the same medicine.

June 9th.—When the urine was again submitted to

quantitative analysis, he had become irritable in his temper, and weaker in his mind.

Result.—Discharged uncured.

No. 9.—J. H—, male, æt. 42, married; a cab-owner; admitted May 9th, 1851. The present is the first attack, and has lasted two weeks. Cause, anxiety in business; the disease is not hereditary.

Symptoms on admission.—Temperament sanguine; pulse 120, weak; skin and head cool; bowels open; no tremor of the upper lip, tongue or limbs; unequal pupils; speech hesitating; appetite good; sleeps well; habits clean; talks of having considerable possessions, and that he can do anything.

Ordered ordinary diet.

May 19th.—The urine was examined at the commencement of a paroxysm of excitement; he was violent, said he was the champion of England; always attempting to fight; noisy at night.

Ordered $\frac{1}{4}$ grain of tartar emetic twice a day.

June 2d.—The urine again examined when the excitement had passed off. The tartar emetic was ordered to be omitted this day.

Result.—August 1st, 1851. Discharged uncured.

No. 12.—C. C—, male, æt. 40, married; a compositor; admitted April 11th, 1851. The present is the first attack, and has lasted about a fortnight. Cause, over-anxiety; habits intemperate; paternal uncle is insane.

Symptoms on admission.—Temperament nervo-sanguine; pulse 84, weak; skin and head cool; tongue clean; bowels costive; can scarcely articulate; thinks he has millions of money, and can buy up all London; very irritable if contradicted; complexion anæmic; much tremor of the limbs and of the lips.

Ordered one fluid drachm of the solution of bichloride of mercury in decoction of bark, twice daily. Ordinary diet.

May 20th.—When the quantitative analysis of the urine

was made, the paralysis was advancing; his habits were dirty; he was incoherent.

June 9th.—The urine was again examined, the draught having been omitted on the 2d instant; he was mischievous, destructive, dirty, incoherent, and excited, and worse than before.

He still had ordinary diet.

Result.—November 7th, 1851. He went out cured.

No. 15.—J. W—, male, æt. 33, married; occupation, a mason; admitted April 11th, 1851. Temperament sanguine. The present is the first attack, and has lasted two months. Cause unknown; disease not hereditary.

Symptoms on admission.—Says that he has been to heaven in a chariot of fire; pulse 120; skin and head cool: tongue clean; bowels open; right pupil dilated; sleeps well; expiration audible on right side of the thorax; secretes rubbish in his pockets; there is stiffness of the upper lip. Soon after this there was hesitation of speech, with the extravagant ideas so often met with in cases complicated with paralysis; he fancied he had married three queens, and that he had twenty millions of money.

He had ordinary diet.

May 10th.—When the analysis of the urine was made, he was destructive; broke windows, and tore his clothes, and was incoherent. He took one fluid drachm of the solution of bichloride of mercury from June 9th to August 18th, when he was better. The delusions gradually subsided.

Result.—February 20th, 1852. He was discharged cured.

Form of Disease.			Chronic Mania.			Chronic Dementia.		
Initials of the Patient .	. C.	J. W.	E. K.	J. C. C.	J. S.	A. M.	H.	S. H.
Number . . .	37	15	16	27	53	3	23	57
Date	ne 9	May 20	May 20	June 2	July 8	May 3	May 27	July 15
Reaction . . .	cid	Acid	Very acid	Acid	Acid	Feebly acid	Feebly acid	Feebly acid
Specific Gravity .	0·17	10·21	10·27	10·22	10·25	10·24	10·11	—
Water	9·00	958·00	944·40	949·80	929·20	—	978·4	973·00
Solid Matter . .	1·00	42·00	55·60	50·20	70·80	—	21·60	27·00
Fixed Salts . .	3·13	16·82	17·95	19·48	9·15	—	8·88	10·16
Phosphate of Lime precipitated by Ca. Cl. and N. H.	2·95	4·33	7·56	2·76	4·02	4·10	2·68	1·26
Solid matter of the urine . .	0·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00
Fixed salts . .	2·02	35·28	32·28	38·80	12·92	—	41·11	37·62
Phosphate of Lime precipitated by Ca. Cl. and N. H.	7·19	10·30	13·59	5·50	5·67	—	12·40	4·66

Form of disease	nia.		Remittent.	Puerperal Mania.			Hysterical Mania.	
Initials of the Pat	H.	S. H.	M. D.	C. P.	S. P.	A. C.	A. G.	E. W.
Number .	58	32	36	14	30	50	55	28
Date . .	ly 15	June 2	June 9	May 20	June 2	July 5	July 15	June 2
Reaction .	cid	Acid	Acid	Very acid	Acid	Acid	Acid	Acid
Specific gravity	—	10·25	10·18	10·26	10·20	10·18	—	10·27
Water .	55·40	938·00	946·4	941·60	957·20	965·2	931·00	924·4
Solid Matter	44·60	62·00	53·6	58·40	42·80	34·8	69·00	75·6
Fixed Salts	13·37	12·91	7·91	10·32	15·62	18·71	12·48	17·00
Phosphate of Lim	1·80	3·57	3·23	7·72	2·60	1·23	4·96	5·66
Solid matter of U	0·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00
Fixed Salts .	2·33	20·82	14·75	17·67	36·49	53·76	18·08	22·48
Phosphate of Lime	5·24	5·75	6·02	13·21	6·07	3·53	7·18	7·48

Remarks.—We observe that in the five cases of acute mania the proportion of phosphates to 1000 grs. was, in four, above the mean quantity found in health, and in one the proportion was nearly of the healthy standard. in Case 47 the phosphates were as high as 9·73, the specific gravity of the urine being 1033; but while we see that this amount of the phosphates is nearly equal to what Dr. Bence Jones has found in certain cases of delirium, and inflammatory action from fracture at the base of the skull, and in violent delirium at the end of phthisis, we must not too hastily conclude that acute inflammation is present in acute mania, because this theory is refuted by the analysis of the blood, by our post-mortem examinations, and by the effect of treatment.

In Case 47 the analysis of the urine was made three days after the admission of the patient, the disease having existed only six days; in Cases 21 and 24 the analysis was made four days after the admission of the patients, the disease in both cases having existed three months; and in Case 51 the analysis was made on the day after the symptoms had changed from tranquillity to excitement, the paroxysm having broken out in the hospital. The analyses in 49 and 59 were made in one case seventeen days, in the other eighteen days, after the admission of the patient; whilst that of Case 4 was made after the paroxysm had lasted nine weeks, and when the patient was much exhausted from its effects. It would appear, therefore, that if the urine be analysed at the commencement of a paroxysm of acute mania, a plus quantity of the phosphates will be found to exist—in some instances equal in extent to the quantity found in encephalitis; that this large secretion of the salt lasts but for a short period; and that it is modified, as in Case 49, by refusal of food, and the prolongation of the paroxysm; and that the exhaustion, which is the effect of the paroxysm, is accompanied, as in Case 4, by a minus quantity of the phosphates, as small, indeed, as that found by Dr. Bence Jones in certain cases of delirium tremens.

The question, then, which is forced upon the mind from these results is this: Is the amount of phosphates found in

the urine a measure of inflammatory action? Is it not rather a measure of the consumption of nerve force? to this question we shall return in the sequel. In the four cases of common mania, and in the case of remittent mania, no symptoms of paroxysmal excitement were present when the analysis of the urine was made, and the amount of phosphates in the urine was in all below the average of health. In Case 34 the health was much broken, in consequence of previous habits of intoxication; and E. H—, Case 58, was admitted in a very weak and emaciated condition, the insanity being accompanied with scrofulous disease of the ankle-joint; besides which, the digestion was much impaired, and he took very little food; these circumstances may in some measure account for the quantity of the phosphates being as low as 1·80. In Case 32 there were well-marked symptoms of the stage of exhaustion, indeed the case was nearly allied to one of acute dementia; upon admission, the reaction of the urine was alkaline, with deposit of the triple phosphate crystals, and as the symptoms improved the urine regained its acid reaction; this may be considered by some to favour the opinion, to which I shall afterwards have to refer, that in cases of mania the urine is generally found to be alkaline; but it is an exception to the general rule which I shall have to lay down, viz., that in the majority of cases of mania, the reaction of the urine is acid.

In the cases of puerperal mania the analysis was made in Case 14, before the stage of excitement had passed off, about a month after the commencement of the attack, and eleven days after the patient was admitted into the hospital: and the quantitative analysis gave the amount of phosphates, as 7·72. In Case 30 the analysis was made during the stage of exhaustion, nine weeks after the admission of the patient, and nineteen weeks after the commencement of the disease, and the amount of phosphates was 2·60. While in Case 50, where the disease occurred after prolonged lactation, although the patient, at the time the analysis was made, was taking abundance of food with two ounces of brandy and two pints of porter daily, to prevent her sinking into a state of

collapse, the amount of phosphates was 1·23. These cases appear to confirm the results met with in the above cases of acute mania, and would lead us to infer that, in the acute stage of mania, there is a plus quantity—in the stage of exhaustion a minus quantity, of the phosphates present in the urine.

In the two cases of hysterical mania it was interesting to compare the manner in which the disease manifested itself in constitutions so dissimilar, the cause of the illness being the same in both. In Case 28, that is, in the anæmic weaver, we find that the phosphates amounted to 5·66; and, in the hyperæmic case, to 4·96; in the second table we find that the amount of phosphates was very nearly of the healthy standard, being in A. G—, 7·18; in E. W—, 7·48.

In the cases of acute dementia we find the amount of phosphates to be remarkably deficient in quantity in the first table, and below the average of health in five of the analyses. When the first analysis of the urine was made, in Case 6, the patient was unconscious of the calls of nature, and inattentive to all that was passing around him: when the second analysis was made, in the same case (No. 17), there was some improvement in the symptoms; and we find the quantity of the phosphates to be 3·95, *i. e.*, 2·43 higher than in the first analysis. In Case 18, when the powers of the mind were in abeyance, the proportion of phosphates was 2·49; when they began to be again exercised, the proportion was 5·10: as a contrast to this we have the case of C. B—, 35, in which we find the proportion of phosphates, June 2d, to be 5·23; and, as the disease advanced, and when she was unable to comprehend what was said to her, the proportion was 2·37.

The analysis of the urine of those suffering from paralysis of the insane, corresponds with that made by Dr. Bence Jones, who was the first to point out the great deficiency of phosphates in this disease; and as the cases from which he derived the specimens of urine, in 1845, were under my care in the hospital, I am able to compare the two analyses with the particular symptoms in all the cases.

The first case in our analysis, F. B—, 1, had a fair average

amount of phosphates when the urine was examined in May and June: this patient recovered. The second case J. C. T—, 2 and 42, is interesting as showing that, when the disease was in the first stage, the proportion of phosphates was 3·42, and the reaction of the urine was acid; and a month afterwards, when the disease was in the transition stage, the amount was 1·57, and the reaction of the urine was alkaline. In the third case, J. H—, 9 and 33, although the urine was examined at the commencement of a paroxysm, the proportion of phosphates amounted only to 2·90; and after the excitement had passed off, and the urine was again examined, it was 2·86: this patient was discharged uncured. In the fourth case, C. C—, 12 and 37, the amount of phosphates was at first 4·46, and, afterwards, when he became worse, it was 2·95. I should say, however, that soon after the second examination of the urine was made, a large boil appeared on his side, after which the symptoms began to improve, and he ultimately recovered. In the fifth case, the examination was made during the stage of excitement, and the proportion of phosphates was 4·33: this patient likewise recovered.

In the first case referred to in Dr. Bence Jones's analysis, the proportion of phosphates was 6·90, and the patient was well enough to be discharged on trial about a month afterwards; he however relapsed, and was readmitted into the hospital August 8th; and when Dr. Jones again examined the urine, the phosphates amounted to 4·14; this patient was discharged uncured. In the second case, the patient was admitted March 7th, the paralysis became rapidly worse, and when the urine was analysed, on June 16th, the proportion of phosphates was only 2·02. Cases 3 and 4, in Dr. Jones's analysis, refer to the same patient; and although the urine was examined the second time during a paroxysm the amount of phosphates was only 1·30. Case 5, in Dr. Bence Jones's analysis, was one where the patient had laboured under paralysis of the insane for many years, and the disease had passed into dementia; here the amount of phosphates was as low as 1·35. In these cases we observe a

diminution in the amount of phosphates corresponding with the progress of the disease; and in the two analyses we have evidence that in two cases where the analysis was made during the existence of a paroxysm, it was, in Case 9, 2·90; and in Dr. Jones's second case, 2·02: if, therefore, the amount of the mixed phosphates be any measure of the expenditure of nerve force, as the above analyses appear to me to prove, we have here evidence of the small amount of phosphoric acid possessed by the atrophied brain in white softening, or œdema of that organ; and we might ask, whether there be not something analogous to this in those cases of delirium tremens where an equally small amount of the phosphates is found in the urine; and whether it be not the atrophy and œdema of the brain which is the cause of such diminution, and not the peculiar action of alcohol upon nervous matter, which action is, in all probability, neutralized by the vital power of the brain itself.

The cases of chronic mania, and chronic dementia, are so far interesting, as they exhibit an amouut of the phosphate below the average in every case but one, viz., that of E. K—, 16, whose powers of mind were very little impaired by the existence of her disease, and who was discharged "on trial" from the hospital on the 22d instant.

If we compare the reaction of the urine in the above cases of acute mania, and chronic dementia, we shall find that in recent cases of mania it was acid seventeen times, feebly acid twice, neutral once; whereas in chronic cases, and those complicated with general paralysis, it was acid nine times, feebly acid four times, neutral once, and feebly alkaline once. Erlenmayer has stated that the urine is generally alkaline in recent cases of mania ('De Urina Maniacorum,' 1844), this does not correspond with my experience, I find that in 125 cases of recent mania admitted during two years under my care into St. Luke's hospital, the urine was acid in 111 cases, neutral in 1, alkaline in 13; being in the proportion of 88⅘ per cent. acid, 10⅕ alkaline, and, omitting fractions, 1 neutral; whereas in 100 cases of chronic mania and dementia, under my care at the same time, the urine was acid in 61,

neutral in 6, alkaline in 33; and in 25 cases of paralysis of the insane, the reaction of the urine was acid in 12, neutral in 1, alkaline in 12.

But we must not infer that it is always a bad symptom when we find the urine alkaline, or an alternation of the acid and alkaline reaction, as in the cases of fracture of the spine, mentioned by Sir B. Brodie; as it is not an evidence of the existence of organic disease of the brain in cases of mania, but rather of exhaustion of the nervous centres; and in this respect it is analogous to the urine of fever; for, as Simon has observed, "in proportion as fever assumes a torpid character, and the vital powers become depressed, the urine becomes clearer, loses its acidity, becomes neutral, and in a very short time alkaline."

If we compare the analysis of the urine in the above cases of mania and dementia, with that of the brain, and the blood, it will appear that they correspond in a very interesting manner: we find in the brain of infancy, and old age, according to L'Heritié, a minus quantity of albumen, cerebral fat, and phosphorus, as compared with that of adults, and a minus quantity of the same substances in the brains of idiots; whereas there is a plus quantity of phosphorus, accordiug to M. Conerbe, in the brains of those suffering from acute mania. In the quantitative analysis of the blood of acute mania, published by Hittorf we find a deficiency of blood-corpuscules, and a slight increase of fibrin, and albumen; and Michéa states that, in cases of paralysis of the insane, he found the albumen to be remarkably deficient in the blood in nearly one third of the cases, and that there was an augmentation of the blood-globules, and an absolute diminution of the fibrin. The tissue from which the phosphates are eliminated is the albuminous, and in the urine we find a plus quantity of the mixed phosphates at the commencement of the paroxysm, and a minus quantity in acute dementia, and in the third stage of paralysis of the insane.

This result corresponds also with the symptoms which we observe during life; for in dementia, when the brain is in a passive state, there is less interference with the func-

tions of the nerves of organic life, and digestion goes on much as in health; but in acute mania there is great disturbance in the functions of primary and secondary assimilation, as is evident from the symptoms of constipation, the unhealthy evacuations, and the deposits of uric acid and urate of ammonia in the urine; the emaciation also which takes place during the acute stage of mania is sometimes very great; and the patients at St. Luke's hospital sometimes weigh many pounds heavier at the time of their discharge as compared with their weight upon admission. The fat appears to be absorbed from all parts of the body to supply the brain; for in acute mania the production of nerve force is very rapid, the increased flow of blood, which is the result, at first stimulates the intellect beyond its ordinary power, when ideas pass through the mind with unaccustomed rapidity; as the disease advances incoherence is the result, in consequence of the multiplicity of thoughts which pass through the patient's mind making it impossible for him to give utterance to all; the cell-nuclei are thrown into a state of unhealthy activity, there is little repose night or day, and want of sleep, as is well known, is one of the most common symptoms; there is a constant demand upon the blood for the albuminous and oleaginous principles; the whole nervous system partakes of this activity and feels its influence, and is thrown into a state analogous to that of electric tension; not only are the hemispheric ganglia involved, but the fibrous structure conveys the impulse to the peripheral extremities of the nerves, producing hyperæsthesia and pseudæsthesia: the nerves of organic life likewise sympathise; the false perceptions of the nerves of special sense, and of those of sensation, and the errors of nutrition and secretion, are sufficient evidence of this; and when the disease arrives at its highest point, and a paroxysm occurs, we have then to deal with another force, which becomes equally unmanageable, I mean the force developed by muscular contractions, which, as Matteucci has shown, is quite independent of the nervous system; these two forces acting and reacting upon each other, produce such a state of

nervous erethism that I have seen patients with symptoms resembling those of an animal poisoned by strychnine; the fury of the passions and the movements of the limbs are quite beyond their control, and the muscular force is developed to such an extent that they sometimes perform feats of strength which they would have been quite unequal to when well.

The symptoms of acute dementia form a striking contrast to the paroxysm of mania; the patient never speaks, he is apparently unconscious of all that passes around him, and his movements are automatic, the pulse is weak, sometimes scarcely perceptible, the extremities are cold and livid, the respiration is chiefly abdominal, and slower than in health: in a case at present under my care, the index of Dr. Quain's stethometer showed that the thorax was raised during each inspiration only five degrees instead of fifty, while the abdominal respiration ranged from thirty to forty-five degrees, the number of respirations being sixteen in the minute. In these cases there is little consumption of nervous force, whereas in the dementia of general paralysis there is little supply; for the atrophy and œdema of the brain must prevent the cell nuclei from being formed in sufficient quantity, and the blood, as has been shown, is not able to furnish the requisite amount of albumen: but this happens in the last stage of the disease; for if the nervous system and the blood were affected in the same way in every case, we should not be able, as in some of the cases given above, to quote instances of recovery, and medical treatment would be of no avail: the fact has been overlooked, that there is more than one species of paralysis of the insane; the scrofulous species differs from that which is the result of delirium tremens; that which is accompanied with anæmia and local congestion differs from that with hyperæmia and hypertrophy of the left ventricle of the heart, and that species which is the result of atheromatous and bony deposits of the blood-vessels of the brain, no less than the hardening differs from the softening of the brain found in these cases, in our post-mortem examinations: probably the reason why Dr.

Conolly has spoken so strongly as to the incurable nature of paralysis of the insane is, that patients labouring under this disease are seldom admitted into Hanwell during its first stage.

If, then, we compare the plus quantity of the mixed phosphates secreted in the commencement of the paroxysm of acute mania, and the minus quantity found in acute dementia, and in the third stage of paralysis of the insane, with the symptoms during life, it gives us, to a certain extent, a measure of the expenditure of nervous force; we know that this force is intimately associated with all the operations of the mind, we believe it to be the connecting link in its relation with matter, being probably the highest form in which matter is found; over-exertion of intellect exhausts its energies, no less than over-exertion of body tends to impair its supplies. It is now generally admitted, that the cell nuclei found in the nervous centres, and at the extremities of the afferent nerves, are the sources of nervous force, and that this force is correlated with electricity, therefore the subject of electricity becomes of greater importance to us in our investigations, whether physiological or pathological. It has long been observed that sudden variations in the temperature and weight of the atmosphere, exert a powerful influence upon all nervous disorders, and that the partial distribution of light and heat have favoured the production of insanity on the northern sides of mountainous districts; the effects, also, of the Siroc of the Mediterranean, and of the viento norte of Buenos Ayres are well known, and we are able to trace a connection between disorders of the nervous system and epidemic diseases; but whether the magnetic variations have any influence upon nervous disorders is still a problem to be solved by future investigations. Schwabe has proved that the epochs of maxima and minima in the variations of the solar spots, are identical with those which have been assigned to the magnetic variations; but Colonel Sabine has shown that he has not been able to derive, from the indications of the thermometer and barometer, any sensible connection between climatic conditions and the number of spots.

The conclusions which may be drawn from the above analysis of the mixed phosphates in the urine of cases of mania and dementia, and the comparison of this analysis with that of the brain, and of the blood, and of the symptoms in similar cases, are as follows:

1. A plus quantity of phosphates exists in the urine in the paroxysms of acute mania.

2. A minus quantity exists in the stage of exhaustion in mania, in acute dementia, and in the third stage of paralysis of the insane.

3. The plus and minus quantities of phosphates in the urine correspond with the quantitative analysis of the brain and of the blood; for a plus quantity of phosphorus is found in the brain, and a slight excess of albumen in the blood of maniacal patients; and a minus quantity of phosphorus and albumen are found in the brains of idiots, and a minus quantity of albumen in the blood of paralysis of the insane.

4. The plus quantity of phosphates in the urine of cases of acute mania, denotes the expenditure of nervous force, and is not a proof of the existence of acute inflammation in this disease.

SUPPLEMENT TO A PAPER ON THE

USE OF THE SPECULUM

IN

THE DIAGNOSIS AND TREATMENT

OF

UTERINE DISEASES,

PUBLISHED IN

THE THIRTY-THIRD VOLUME OF THE MEDICO-CHIRURGICAL TRANSACTIONS.

BY

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Since the publication of the Paper now referred to, 217 cases of real or imaginary disease of the uterus have come under my observation—197 being private patients—in which the speculum had been employed. Written histories, containing all the details of these cases, have been preserved, which I have condensed into a tabular form, and are now presented to the Society.

Of these 217 patients, 36 were unmarried, and 55 were married, but barren. Of the above 91 cases, the greater number were women suffering from hysteria, leucorrhœa, dysmenorrhœa, or some nervous affection of the uterus,

without inflammation, ulceration, or any structural disease or displacement of the organ. In none, had the symptoms been permanently relieved by cauterizing the uterus; through the speculum; and in some, they were aggravated by the treatment pursued. Of the 36 unmarried patients, who had undergone longer or shorter courses of treatment, with the speculum and caustic, and had the parts injured, it appears from the Table that, there were only two above 40 years of age: that there were a number under 30: two under 20; and that one, who had long been subjected to this treatment, barely completed her eighteenth year.

Of the 55 married but sterile women, it likewise appears that, their ages varied from 22 to 54, and that some organic disease existed in several, who had been subjected to this mode of treatment after their 48th year.

In a considerable number of these 217 cases, cancerous disease of the uterus and vagina existed; the frequent employment of the speculum and caustic being in every instance followed by an increase of pain and hemorrhage. In one, death from loss of blood speedily followed the use of the speculum, employed by a practitioner who met me in consultation. In most of these cases of cancer, the nature of the disease must have been wholly misunderstood; and the ulceration supposed simple, which was in reality malignant, and beyond the reach of all remedies.

In several marked cases contained in this Table, ovarian and uterine tumours existed, or diseases of the parts at the entrance to the vagina, which had been entirely overlooked! but were immediately detected by the ordinary methods of investigation.

No.	Date.	Civil Condition.	Age.	Previous Symptoms, Treatment, and State of Uterine Organs.
1	—— 1850	Married.	36	*Previous History.*—Dysmenorrhœa and leucorrhœa since the birth of youngest child, fifteen years before. In October examined with speculum: Ulceration of os uteri stated to be present; leeches applied, then caustic every fourth day for ten weeks; afterwards at longer intervals. A new action then said to be set up in the part; symptoms aggravated; tonics; injections of zinc and alum; tepid hip-baths. *Present State.*—Os uteri felt soft, smooth, and swollen; a little hardness on the inner surface of the cervix; a small red patch on the anterior lip, near the left side, seen through the speculum; not elevated or depressed; did not bleed on pressure; no ulceration nor cicatrix visible.
2	—— 1850	Married three years; barren.	32	*Previous History.*—Leucorrhœa; pain in the groins; prostration of strength; hysteria. A great variety of remedies employed with temporary benefit. About Christmas, examined with speculum, and "a considerable ulcer of os uteri" said to exist. Lunar caustic applied weekly through the speculum during two months; bougies then employed to dilate os uteri; sterility not removed, nor symptoms; since has had constant pain around the left ilium. *Present State.*—Uterus lower than natural; os soft, and smooth; unusually open and tender; no ulceration nor cicatrix.
3	—— 1850	Single.	42	*Previous History.*—Painful hemorrhoidal tumours; torpid state of liver, stomach, and bowels; inability to walk. Uterus examined: said to be retroverted, and various metallic instruments used without relief; stricture of rectum afterwards said to exist, for the relief of which bougies employed, which excited great pain. Speculum then used, and os uteri said to be largely ulcerated, and body enlarged, and pressing on the rectum. Caustic recommended, but not allowed. *Present State.*—Os uteri red, slightly excoriated; body enlarged; health broken.
4	—— 1850	Single.	28	*Previous History.*—Hysteria; pain of right groin; restlessness and sleeplessness at night; leucorrhœa. Had sustained an injury a year before, and was some time confined to bed. Examined with speculum, and os uteri said to be ulcerated. Speculum and caustic used three times every week during five months; then reported to be "cured," but all the symptoms returned in an aggravated form. *Present State.*—Os uteri and body of uterus in a perfectly healthy state; no cicatrix.
5	—— 1850	Married; barren.	29	*Previous History.*—Leucorrhœa. Went to an hospital, where the house surgeon examined with speculum, and stated that there was ulceration of the os uteri and cervix; speculum and caustic employed every Tuesday and Friday during two months. This was invariably followed by pain and hemorrhage, "so that she could not walk home;" symptoms aggravated. *Present State.*—The uterus, both without and with the speculum, appeared perfectly healthy.

No.	Date.	Civil Condition.	Age.	Previous Symptoms, Treatment, and State of Uterine Organs.
6	—— 1850	Single.	30	*Previous History.*—Hysteria, dysmenorrhœa, and leucorrhœa for ten years; pain in the right knee, back, and right side. Examined with speculum, and inflammation of uterus said to exist. Twelve leeches externally; steel, wine, warm hip-baths, without relief. Uterus again examined with speculum, when "engorgement and ulceration" were stated to be present. During five weeks speculum and caustic frequently used; symptoms not relieved; injections; treatment continued; catamenia irregular; "ulcers of the womb, enlargement and adhesion," then said to exist; an operation of some sort performed, which was followed by hemorrhage; no benefit. *Present State.*—Examined both by the touch and sight, and found the uterus healthy.
7	—— 1850	Married; barren.	36	*Previous History.*—Menorrhagia, with sensation of fulness and weight about the uterus for several years. Twelve months ago examined with speculum, when ulceration was said to exist; caustic applied; afterwards pregnancy suspected. *Present State.*—A hard tumour is now felt in hypogastrium; body of uterus enlarged and indurated; neck shortened; posterior lip red, like a raspberry, and when pressed with speculum, blood oozed out; no ulcer or cicatrix.
8	—— 1850	Married.	50	*Previous History.*—Swelling of the abdomen; irregularity of the catamenia, and some symptoms of pregnancy. Uterus examined, found healthy, and in the unimpregnated state; then informed that a few days before the patient had been examined with the speculum, and informed that there "was an ulcer in her womb the size of half a crown; and that, if not immediately attended to, it would soon end in cancer." Three months' treatment with speculum and caustic, it was said, would be required for the cure of this ulcer. *Present State.*—Examined os uteri with speculum: both lips were unusually red, but no ulcer to be seen; health subsequently perfectly restored without speculum and caustic.
9	—— 1850	Single.	30	*Previous History.*—Leucorrhœa four months after delivery of first child; excoriation of external parts and constant pain. Examined with speculum, and fissures of os uteri said to be detected; lunar caustic applied with apparent benefit; discharge returned; pregnancy again took place before the treatment had been completed; safely delivered of a second child; discharge again took place. Examined with speculum, and cauterized without relief. Four months ago again examined with speculum, and ulceration said to exist. Potassa fusa severely applied; sloughing followed. *Present State.*—Os uteri hard, rough, and irregular; discharge profuse; in constant pain; health deeply injured by the treatment.

10	—— 1850	Unmarried.	30	*Previous History.*—Till eight years before, had enjoyed good health; some violence then committed upon her; has since been delivered of a child, and leading an irregular life; reported to have profuse discharge. Her medical attendant had examined with the speculum, and stated to me in consultation that there was a great ulcer of the os uteri. *Present State.*—No symptom of uterine disease; os and cervix uteri without and with speculum apparently healthy. The practitioner, who supposed that he had seen an ulcer, again examined with the speculum, and freely admitted on the occasion that no ulcer existed, and that he had been deceived by appearances.
11	—— 1850	Married; barren.	29	*Previous History.*—Dysmenorrhœa, leucorrhœa, irritability of uterus. *Present State.*—Os uteri low down, soft, and smooth; body lying upon the rectum. Being informed that the patient would not be satisfied with an ordinary examination, the speculum was employed at the request of her medical attendant, who met me in consultation; and who was disposed, from the symptoms, to believe that ulceration might exist: os uteri red, but healthy.
12	—— 1850	Married; barren eight years.	32	*Previous History.*—Inflammation of the uterus and its appendages nine years ago, after the delivery of her first and only child. Attacks of pain during the last four years in the right side of hypogastrium; a year ago pain increased, and extended down the lower extremity, and over the whole abdomen; catamenia scanty and irregular; the speculum and caustic employed twice a week for two months, and then once a week during the last two months. *Present State.*—Now worse than when the treatment commenced; uterus in the natural situation; anterior lip projects unusually; a fissure on the right side; os open; lips red; no ulceration; symptoms not relieved.
13	—— 1850	Married; barren.	31	*Previous History.*—Dysmenorrhœa, leucorrhœa; general health good, but inability to walk. Two months ago, speculum used, and caustic applied to the anterior lip, which was said to be redder than natural. Application of caustic, followed by a red discharge. *Present State.*—Dysmenorrhœa not relieved; os uteri red; a Nabothean gland enlarged on right side; anterior lip irregular, as if injured.
14	—— 1850	Married; barren.	26	*Previous History.*—An inflammatory attack about the uterus soon after marriage; afterwards dysmenorrhœa and leucorrhœa. Twelve months ago examined with speculum: os uteri said to be ulcerated, and had caustic applied, and took Tinct. Guiac. Ammoniat.; six leeches afterwards applied to os uteri; speculum and caustic since frequently employed, followed by great faintness and pain. Before the caustic was used, no pain except at the monthly periods; since then has had constant uneasiness, and has been unable to stand or walk. *Present State.*—Leucorrhœa greater than ever; anterior lip soft and spongy; whole os red, swollen, and irregular; viscid white fluid escaping from os uteri; no blood flowed from os when pressed with speculum; no benefit from treatment.

No.	Date.	Civil Condition.	Age.	Previous Symptoms, Treatment, and State of Uterine Organs.
15	—— 1850	Married; barren.	30	*Previous History.*—Inflammation of uterus eight years ago, three months after marriage; dysmenorrhœa since. Two years ago examined with speculum, and informed that the uterus was inflamed, but not ulcerated; that there was a fibrous deposit in the "uterine tissue." Leeches repeatedly to os uteri; no benefit; hysterical fits; pain in the back and thighs: 1st Jan. examined with the speculum, who declared, that ulceration of cervix and os existed; speculum frequently used, and nitric acid applied; intense pain; this practice continued four months; symptoms not relieved; then treated by a homœopathist. ***Present State.***—Os red, swollen, open; not ulcerated; white, viscid discharge; irritable and capricious.
16	—— 1850	Married; barren.	38	*Previous History.*—Catamenia irregular; married twenty years; prolapsus uteri seven years after. Examined by a practitioner in Paris with speculum, and cauterized five times, which caused great pain; injections and baths. Uterus afterwards said to be retroverted; profuse leucorrhœa. ***Present State.***—Os feels thick, soft, and puffy. An attempt to introduce the speculum produced intense pain; uterus enlarged, in all probability from the presence of a fibrous tumour in its posterior wall.
17	—— 1850	Married.	22	*Previous History.*—Great mental distress; almost constant pain in the back and hypogastrium, and left groin; sense of bearing down; profuse leucorrhœa. Her medical attendant, in consultation, said "all the symptoms of ulceration are present in this case to repletion." ***Present State.***—We examined with the speculum, when it appeared that the os uteri was in the most healthy condition; the lips pale, not swollen, os very little open; cervix felt neither elongated nor thickened; uterus a little lower than natural; white viscid fluid escaping from the os; nervous, miserable, and depressed. Recovered under proper constitutional treatment.
18	—— 1850	Married; five children.	40	*Previous History.*—Since the birth of youngest child has resided long within the tropics. Catamenia every three weeks; hysterical; leucorrhœa since the birth of youngest child, five years ago; twelve months ago lost the power of walking from pain in the sacrum. Examined with speculum, and os uteri reported to be red and swollen, especially anterior lip; scarification employed; symptoms not relieved; returned to West Indies; symptoms aggravated; came back to England. Examined with speculum: os uteri in the same condition. ***Present State.***—Os uteri of a dusky red colour, and swollen, especially anterior lip, apparently ready to burst; a copious viscid secretion flowing through os, not purulent; vagina red and swollen; no ulceration; leeches repeatedly applied; lunar caustic, then Liq. Plumb. Diacet., by means of a sponge tube; Bichloride of Mercury externally; no benefit.

19	—— 1850	Single.	30	*Previous History.*—Hysteria; inability to walk; pain of back, for which leeches and blisters were applied; dysmenorrhœa; leucorrhœa during twelve months. Examined with speculum, and os and cervix uteri said to be inflamed and ulcerated. During seven weeks speculum and caustic frequently used, without benefit. After an interval, the same method of treatment again had recourse to, upwards of twenty times, without relief. *Present State.*—Os uteri soft and smooth, lips small; cervix not enlarged or indurated, no ulceration, nor trace of cicatrix; vagina swollen; profuse leucorrhœa; violent uterine excitement, resulting from the long-continued use of speculum and caustic.
20	—— 1850	Married.	34	*Previous History.*—Suffered long from headache and feeling of confusion; loss of sight and intellectual power; aversion to her children; "ideas of self-destruction;" sleepless nights; a sensation of a thread in her mouth. Twelve months' treatment with speculum and caustic; felt better as long as she remained on the couch; as soon as she began to move about symptoms returned. Five weeks ago examined with the speculum at Malvern, and the report was, "that the ulceration was not cured," and that the uterus was displaced; the practitioner stated further, that there was "a large lump in the neck of the womb;" lunar caustic twice applied through the speculum. On being informed that the strongest caustic was required, the patient left Malvern. *Present State.*—Body of uterus inclined forward; anterior lip swollen; no pus or blood brought away with the finger; a fissure on the left side, very irregular, and feeling ragged; little pain on examination; anterior lip seen swollen, but not vascular; posterior rough and irregular at the margin, but not ulcerated; did not bleed when probed.
21	—— 1850	Single.	23	*Previous History.*—Was in good health four years ago. In June last year seized with pain in the head, back, loins, almost from head to foot; catamenia then regular; not hysterical. At Norwich was ordered a shower-bath, medicine, an issue in the arm, and leeches to the head and side; nine weeks this treatment pursued without relief; then had blisters to the chest and stomach, and a variety of medicines during three months; subsequently three months under the care of a physician, who prescribed other remedies without relief: then consulted a practitioner, who examined with the speculum, and said there was inflammation of the neck of the womb. The speculum and caustic were employed seven times; had no leucorrhœa before the caustic was applied; has had a discharge ever since, but less pain at the monthly periods. *Present State,* eighteen months after this treatment. —Catamenia regular; trifling leucorrhœa after; os uteri small, smooth, cervix in the most natural state; no disease or displacement of uterus; the hymen broken up; vagina contracted; palpitation, faintness; pains in the eyes; flushes of heat; dyspnœa; pain in back and loins when she walks.

				succeeded in doing so. Since restored to health, and happily married.
23	—— 1850	Married.	24	*Previous History.* — Has made several voyages to the East, and resided [illegible]. Since the birth of her youngest child, two years ago, has had leucorrhœa. Was treated, in Liverpool, with caustic, for ulceration of the os uteri. Last week, a practitioner examined with the speculum, and "found the os in a vascular congested state." Was six months under treatment, with speculum and caustic; repeatedly scarified; symptoms not relieved. *Present State* —Uterus low down, not retroverted nor displaced in any way; lips of os uteri tumid, but not hard or irregular; no ulcer or cicatrix; cervix more voluminous than natural, and the body also enlarged, the whole moveable; pain of hypogastrium; hysterical.
24	—— 1850	Married.	38	*Previous History.*—About a year ago, lost a child, which produced great mental distress. Since, has suffered from pain of the hypogastrium; sense of burning and itching in the vagina and uterus. Several months under the care of a practitioner, who frequently employed the speculum and caustic, without the least benefit. Went to Edinburgh, and was there told she had retroversion of the uterus, and that "if she remained there some months would be thoroughly cured." An attempt being made to introduce a metallic ring and prong into the vagina, was alarmed, and speedily re-crossed the Tweed. *Present State.*—Uterus in the natural situation; lips red and swollen; cervix and body exquisitely painful when touched; constant suffering from sense of heat and pain internally.
25	—— 1850	Single.	36	*Previous History.* — Had long suffered from dysmenorrhœa. Persuaded by a practitioner, in April last, to have bougies of different sizes passed through the os and cervix uteri. This was done thirteen times, each time the speculum having been previously introduced into the vagina, which gave "terrible pain;" the use of the bougies was followed by profuse menorrhagia and leucorrhœa.

				Another practitioner was then consulted, who examined with the speculum, and declared "the os and cervix uteri to be extensively ulcerated." The speculum was afterwards used fifteen times, and the parts cauterized. *Present State.*—Now wholly confined to her couch; health ruined; profuse menorrhagia. Uterus examined by the sense of touch, and no disease or displacement detected. Vagina widely dilated. Hymen gone.
26	—— 1850	Widow.	38	*Previous History.* — Menstruation irregular. Severe nervous disorder, which commenced with the insanity and death of her husband. At times, decided hysterical attacks. Had consulted a practitioner, who had examined with the speculum, declared ulceration to exist, and had employed caustic through the speculum many times without any advantage. Consulted several other practitioners, one of whom thought she had diabetes, the others, irritability of the uterus. *Present State.*—Great derangement of the nervous system, bordering on mania; the os, cervix, and body of uterus in a perfectly healthy state; extreme tenderness on pressure around the cervix.
27	—— 1850	Married.	37	*Previous History.*—Has had several children and miscarriages. Profuse menstruation six years, and leucorrhœa; pain in the back, and inability to walk; hemorrhoids four years; scrofulous diathesis. Has undergone a long course of treatment with the speculum and caustic, without the slightest benefit. *Present State.*—Anterior lip of os uteri thickened, posterior healthy; several Nabothean glands enlarged; no ulceration to be seen, nor cicatrix.
28	—— 1850	Married.	29	*Previous History.* — Has had three children, and has suffered severely in each pregnancy; pain in the back, and inability to walk, since the last confinement, in 1844. Then examined with the speculum, and told the womb was ulcerated. Nitrate of silver applied through the speculum, repeated leeching, without benefit. *Present State.*—Uterus lower than natural; os uteri swollen, red, not ulcerated; glands enlarged; a yellowish viscid discharge escapes in large quantities from the os; no disease of the cervix detected; body of uterus not felt enlarged.
29	—— 1850	Married.	51	*Previous History.*—Two children, the younger nine years old. Five months ago began to suffer from bearing down, and pain extending along the thighs and calves of the legs; continued violent pain in the region of the uterus; catamenia ceased in January, after which had leucorrhœa, and swelling of the hypogastrium. Was examined with the speculum, but not cauterized. *Present State.*—Uterus now in its natural situation, enlarged on the right side; os irregular; two fissures; some redness within the orifice, a clear viscid fluid escaping from it; hypogastrium distended, but no fluid or solid tumour detected; great tenderness in the region of the liver.

No.	Date.	Civil Condition.	Age.	Previous Symptoms, Treatment, and State of Uterine Organs.
30	—— 1850	Married.	about 35	*Previous History.*—Had one child twelve years since. Before this confinement, had abscess about the parts while pregnant, which repeatedly broke and gathered again. Some years since, consulted a surgeon about the affection, and from that time till eight months ago it has given little trouble. Then consulted Dr. ——, who examined with the speculum, and applied caustic to the os uteri seven times through the speculum; complaint aggravated; and since, there have been attacks of inflammation and suppuration. *Present State.*—Os and cervix uteri healthy; the inner surface of the left nympha red and swollen; a small round aperture on the outside, through which a probe was passed into a sinus in the interior of the nympha.
31	—— 1850	Married.	47	*Previous History.*—Long subject to leucorrhœa; during two years, menstruation more frequent than usual; general debility. Since April, hardly ever free from coloured discharge, and has had more pain extending down the thighs; irritation of the bladder; walls of vagina hard and contracted. *Present State.*—Great hardness, irregularity, and ulceration of the whole lower part of the uterus; the lips and neck confounded together; a bloody, fetid discharge, as in cases of ulcerated carcinoma of the uterus. At the request of her medical attendant, employed the speculum, and saw a bloody, irregular, ulcerated surface: the nature of the disease ascertained before the speculum was used in this case.
32	—— 1850	Married; barren.	30	*Previous History.*—Married three years; soon after, dyspepsia, and irregular menstruation; leucorrhœa during two years. In May, examined with speculum, and informed that there was congestion of uterus, and leeches were applied repeatedly, then lunar caustic through the speculum every six days during two months. For a time felt better, but symptoms returned. *Present State.*—Pain of abdomen; indigestion; leucorrhœa; os uteri small, smooth, and pointed; cervix slender; no ulceration or disease, except a slight abrasion from the caustic recently applied.
33	—— 1850	Married.	Middle.	*Previous History.*—Twelve months ago, not long after her marriage, became extremely nervous, and was alarmed, from uneasy sensations about the uterus, that she had cancer. Consulted a homœopathist, who examined with the speculum, and applied caustic many times. Pregnancy took place, and she was delivered with instruments after a protracted labour, of a dead child. *Present State.*—A favorable recovery. Uterus perfectly healthy.

34	—— 1850	Married; barren.	Ditto.	*Previous History.*—Married eight years. Violent hysteria in early life. Four years ago went to Paris, and was examined with speculum, and informed that she was labouring under inflammation of the uterus, and that a long course of treatment would be required. The Revolution occurring, came to London, and consulted a practitioner, who examined with the speculum, "who said it was a clear case that there was great ulceration of the cervix, and that she must immediately put herself under surgical treatment. Caustic applied three times a week for months, occasionally leeches." This treatment lasted from September till May, when "she was reduced to a skeleton." Potassa fusa afterwards applied, which made her much worse. All local treatment abandoned. *Present State.*—No disease, or displacement of uterus.
35	—— 1850	Married; barren.	48	*Previous History.*—Menorrhagia for many years; uterus large and hard, in all probability from the presence of a fibrous tumour in the walls. For a time appeared to derive benefit from the mineral waters of Germany. Since, has suffered from pain in back; nausea, and there have been attacks of profuse menorrhagia. Recently examined by a practitioner in London, with the speculum, informed that there is ulceration of the os and cervix uteri, and has been cauterized seven times through the speculum. *Present State.*—Uterus large and hard; no ulceration or cicatrix.
36	—— 1850	Married; barren.	26	*Previous History.*—In delicate health before her marriage. Tumours, probably ovarian, in the hypogastrium, first observed twelve months ago; they have not increased, and are not painful; catamenia regular, but painful. Two years ago, examined with the speculum, by a practitioner in a provincial town. The speculum and caustic employed every week for three months, followed by great weakness, and "discharge of slime;" distressing irritation about the rectum and bladder. *Present State.*—Leucorrhœa; sensation of constant heat and pain about the uterus; os uteri smooth, and regular; since the caustic was applied, has never been free from heat and irritation of parts; tumour stationary.
37	—— 1850	Married; barren.	50	*Previous History.*—In 1848, uneasiness about the uterus, and discharge from the vagina; after some time, a small vascular tumour seen growing through the os uteri, believed to be of a malignant nature. Soothing treatment recommended. Returned into the country. Speculum occasionally employed; tumour seen slowly increasing. In November, 1848, the tumour being as large as a walnut, consulted a practitioner, who used the speculum, and recommended the application of Potassa fusa; tumour enlarged, and filled the vagina; afterwards, repeatedly destroyed with Potassa fusa; grew again, and proved fatal.

No.	Date.	Civil Condition.	Age.	Previous Symptoms, Treatment, and State of Uterine Organs.
38	—— 1850	Married.	37	*Previous History.*—Catamenia have entirely disappeared during six months; emaciation gradually going on without any obvious cause. Twelve months ago, examined with the speculum, and ulceration of the cervix uteri said to exist. Confined three months wholly to her couch, and two months since, had the uterus frequently rubbed with nitrate of silver. Her health then rapidly declined, and has never since recovered. *Present State.*—Fancies herself *enceinte*, but she is not; no enlargement, nor hardness of abdomen; uterus neither diseased nor displaced; os smooth; orifice a little open; no hardness; body a little larger than ordinary; rapid pulse; gradually sank.
39	—— 1850	Married; four children.	34	*Previous History.*—Three miscarriages. Catamenia regular; great pains in the breasts, across the back; has an idea that she has an aneurism. Has been examined, and informed that she has retroversion of the uterus, and was persuaded to try to have passed into the vagina a metallic ring and prong; wore it six weeks, and then it became intolerable; great pain in the uterus ever since, and profuse discharge. Then examined with speculum, and underwent a long course of cauterizing. In severe suffering ever since. *Present State.*—Uterus low down; os open; enlarged glands; slight irregularity and hardness. June, 1851—No change.
40	—— 1850	Single.	23	*Previous History.*—Ill during six years, owing it was supposed to riding on horseback. Catamenia regular, but painful; frequent desire to relieve the bladder; fits of hysteria; constant headache; "sense of pressure on the top of the brain." Examined with speculum, and caustic frequently applied; violent uterine excitement followed, and immoral habits, which rendered her miserable. *Present State.*—No organic uterine disease.
41	—— 1850	Married.	26	*Previous History.*—Two years ago, went overland to India, during her first pregnancy, and then made a journey of 400 miles into the interior. Prolapsus uteri followed delivery. A few months after, having leucorrhœa, was examined with the speculum, and ulceration of the neck of the uterus was said to exist; and during eight months, she was cauterized every third day, and the os uteri frequently scarified and leeched. Her health dreadfully injured by the long confinement and the treatment, and there was almost constant pain. Arrived in London, two days ago, having had inflammation of the lungs during the voyage. *Present State.*—Leucorrhœa continues; os uteri hard and irregular; lips apparently partially destroyed; body not diseased. Gradually restored to health.

42	—— 1850	Married; barren.	32	*Previous History.*—Married seven years before. Catamenia regular, but painful; general health good, but hysterical. Soon after her marriage, had pains in the groin and region of the uterus. Was examined with the speculum: declared to have ulceration, and underwent a long course of treatment with caustic and leeches, without any benefit. During the last three years, fits of hysteria; giddiness, and confusion; dimness of vision; sleepless; irritation of bladder; violent pains in the back, and at times between the shoulders. To remove the sterility, bougies were passed into the os uteri for some months, without any good effect. Examined with speculum, by a third practitioner in London, who applied caustic to the os once a week for two months; no relief. Examined with speculum, by a fourth London practitioner, and caustic was applied three times a week for "months and months." A fifth practitioner consulted, who stated that "there were four bars across the mouth of the womb, which must be dilated." *Present State.*—Prolopsus uteri; os and cervix healthy, but forced unusually low in the pelvis.
43	—— 1850	Married.	36	*Previous History.*—Some accident during her first labour. In the interval of three years between the birth of her second and third children, was under the care of two physicians, in London, who employed the speculum and caustic frequently during many months. Three hundred leeches were also used externally, by which her strength was greatly reduced; gradually was restored to health, but relapsed, and "again went through the same mode of treatment at intervals." Last delivery took place six years ago, since then has been suffering "from violent sickness and spasm; hysteria; palpitation of the heart, exhaustion," and inability to walk. Mercurial suppositories twice weekly; croton oil rubbed externally. *Present State.*—In a state of great debility; swelling of feet and ankles; palpitation of heart; profuse leucorrhœa; unfit for any duty in life. No disease of uterus detected. The health of this patient was in time completely restored by rational constitutional treatment.
44	—— 1850	Married.	30	*Previous History.*—Married four years. Profuse leucorrhœa soon after took place. Consulted a practitioner, who declared it to be of a specific nature. A second declared it was not. Was seven months under his care, and had the speculum and caustic frequently used, "which made her very ill." Great tenderness of vagina. *Present State.*—Vagina contracted, so much that a small bougie was introduced with great difficulty, and caused much pain. In the course of three months the complete dilatation was safely effected by bougies; pregnancy took place, and the delivery was natural.

No.	Date.	Civil Condition.	Age.	Previous Symptoms, Treatment, and State of Uterine Organs.
45	—— 1851	Married.	40	*Previous History.*—Three children. Profuse menstruation since the last delivery, sixteen years ago; congestion of the brain; weakness of the stomach, and general debility; left ovarium supposed to be diseased; "uterus retroverted or rather anteverted." Ricord's speculum employed, which "gives great and lasting pain." "A tumour in the fore wall or surface of the organ." "A great quantity of baths, mixed with sea-salt and salt of Kreuznach;" no benefit. "Iron, quinine, diluted sulphuric and muriatic acids, and phosphorus and opium, without relief; and mercury, iodine and secale cornutum." Injections with Liq. Hydr. *Present State.*—Os and cervix uteri perfectly healthy, lying far back in the pelvis; a large, hard, fibro-cartilaginous tumour in the anterior wall of the uterus.
46	—— 1851	Married; barren.	23	*Previous History.*—Married three years and a half. Two years has been treated for "inflammation of the os and cervix uteri;" "leeches applied several times with little benefit, and blistering and cupping the lumbar region; bougies, poppy-head decoction and other injections, suppositories, aperients, hip-baths, &c., abstinence." Hysteria; menstruation profuse and painful, and irregular; pain when the urine is passed, and it is clear; severe headaches; constipation; bad appetite; pain, and a burning sensation in the back; flatulence; swelling of abdomen; leucorrhœa. Has been examined with the speculum, and frequently cauterized and scarified. Ulceration said to exist. *Present State.*—Suffering from hysteria, in its most marked forms; os and cervix uteri perfectly healthy, no displacement, smooth, not swollen, nor hotter nor more tender than usual.
47	—— 1851	Married.	30	*Previous History.*—Four children; suckled the last too long; great weakness; bearing down; catamenia not regular; violent pains in the back and lions; pain of the shoulders; "dreadfully nervous," and anxious on her husband's account; sense of suffocation, and ball in the throat; discharge from uterus, like treacle, between the monthly periods; irritation about the bladder. Examined with the speculum, by a London practitioner, and has had caustic used extensively. Ulceration of os and cervix uteri said to exist. No better. *Present State.*—Os uteri seen red, swollen, not ulcerated; anterior lip somewhat irregular; no tendency to any organic disease.
48	—— 1851	Married; barren.	33	*Previous History.*—Married at nineteen; ever since has suffered from sense of scalding pain about the bladder; in the hypogastrium and back; and unable to walk. A London practitioner saw her twice every week during seven years. Was examined with the speculum: declared to have ulceration of the os and cervix, which was cauterized many times; since, has had a yellow discharge. At each

				monthly period confined to bed. No benefit derived from this treatment, which has been repeated by another practitioner, with leeching, &c. *Present State.*—Swelling of ankles; digestion bad; constant sense of pressure upon the head; extremely nervous and miserable, and useless for all good purposes; only comfortable after she has taken a blue pill and a black draught; vagina very contracted, and tender; uterus not displaced; os open: lips sound; no disease of organ.
49	—— 1851	Married.	30	*Previous History.*—Dangerous attacks of uterine hemorrhage during her confinements. "The hemorrhage said to proceed from the inner surface of the uterus, and the only effectual remedy, cauterization." "Subsequent ulceration of the anterior lip of the mouth of the womb." 26th Aug., looks extremely well; catamenia last period not excessive, and without pain; anterior lip of os uteri smooth, swollen, and harder than natural; posterior lip thin, and irregular; no ulceration of either lip; caustic had been applied more than twenty times.
50	—— 1851	Married.	33	*Previous History.*—One child three years since. Leucorrhœa six months after, and violent pain in the hypogastric region and back. Mercury, to salivation; tinct. of iodine applied to the os uteri through the speculum three times every week during four months. "Has not benefited in the least degree by the treatment." *Present State.*—Os uteri seen swollen, and red on the inside, not unusually open; a copious thick discharge escaping from the orifice; no trace of any ulceration, which was said to exist, and no cicatrix visible.
51	—— 1851	Married; barren.	34	*Previous History.*—Married two years. Catamenia regular, with great pain in the back; great mental anxiety from a Chancery suit. Examined with speculum: os and cervix uteri declared to be ulcerated, and caustic applied. *Present State.*—Complains of burning heat all over the left side of the lower part of abdomen, which often feels swollen; vagina contracted and tender; no disease of uterus detected.
52	—— 1851	Married.	25	*Previous History.*—One child about three years ago, afterwards had leucorrhœa. Consulted a practitioner, who made an examination with the speculum, ulceration reported to exist, and cauterization employed during two months; leucorrhœa ceased. *Present State.*—The discharge has reappeared very profusely, "in fact, is quite as ill as she was before the caustic through the speculum was used;" catamenia have disappeared three months; veins of legs swollen; uterus enlarged from pregnancy. The delivery took place at the beginning of October, suckled her child, and restored to good health.
53	—— 1851	Single.	35	*Previous History.*—Occasional profuse sanguineous discharges from the uterus, at other times leucorrhœa; is reported to have had "engorgement of the uterus." *Present State.*—Uterus large and hard, from the presence of a fibrous tumour in its walls. A London practitioner was afterwards consulted, who examined with the speculum.

No.	Date.	Civil Condition.	Age.	Previous Symptoms, Treatment, and State of Uterine Organs.
54	—— 1851	Married; barren.	28	*Previous History.*—Married two years. Pain in the back and sides; loss of strength [illegible] last, examined at Edinburgh, with the speculum, and informed that "the cause of her suffering was a small ulcer on the neck of the womb," and "blue ointment pessaries were recommended." One of which was introduced daily. Afterwards informed by the same practitioner, that her complaint was "a small fibrous tumour in the neck of the womb." Got worse under the treatment. *Present State.*—In London, examined with the speculum and without. No disease detected; since restored to perfect health; and was lately delivered of a healthy infant.
55	—— 1851	Married.	35	*Previous History.*—Several children, the youngest twelve years. Catamenia regular, till last Jan.; at times, for some years, leucorrhœa, more profuse, and sometimes red coloured during the last seven months; loss of strength; no pain. *Present State.*—Os uteri now open; lips irregular; nodulated feel of the inner surface of the posterior lip; the commencement of fungoid cancer, a long course of severe cauterization carried on by the practitioner through the speculum. Nature of disease wholly misunderstood. Death with great sufferings some time after.
56	—— 1851	Single.	38	*Previous History.*—Had suffered long from nervous weakness, and inability to walk. July, 1849, was examined with the speculum, at New York, and repeatedly cauterized. On returning to London, consulted a practitioner, who stated, after using the speculum, that there was prolapsus and retroversio uteri; the prone posture was recommended, and observed during nine months. Twelve months ago, ceased to lie with her face to the ground; and was declared to be quite cured. Soon after, began to suffer from headache, lowness of spirits, and "lost the power of walking in public, in private she could walk like other people." Then consulted a somnambulistic-mesmerist, who declared there was disease both of the uterus and spine. *Present State.*—Uterus healthy, but suffering from hysteria, &c. &c.
57	—— 1851	Married.	43	*Previous History.*—Three children. An abortion ten months ago, followed by menorrhagia; health long delicate; attacks of vomiting of blood. Examined with speculum, by a practitioner, in London, two months ago: ulceration of the os uteri said to exist; cauterized once. *Present State.*—Considerable discharge of blood from the uterus; irregular action of the heart; anterior lip of os uteri swollen; several glands slightly enlarged; a fissure seen on the left side; no ulceration or abrasion; the posterior lip red, and slightly swollen.

XXXVIII.	58	—— 1851	Single.	18	*Previous History.*—For some time had suffered from hysteria, nervous weakness, inability to walk, dysmenorrhœa, and leucorrhœa. Was persuaded to consult a London practitioner. When examined: engorgement and ulceration of the cervix reported to be present. The usual treatment followed, and was often "touched with caustic." During twelve months she lay upon the couch and read novels. *Present State.*—No disease or displacement of the uterine organs. Relatives state "her character is totally changed, that she is completely vitiated, and that after being long in the hands of this practitioner, she could not be got out again, being so infatuated with the affair." There was every reason to believe the correctness of these statements, as also to conclude that, the frequent and long continued use of the speculum and caustic had occasioned a demoralizing effect, as it was acknowledged to have produced upon other patients, whose cases are comprehended in this Table.
	59	—— 1851	Married; five children.	35	*Previous History.*—Five children, the youngest four months old. The labour protracted and preternatural; followed by hemorrhage; great debility. Went to Malvern, and was treated homœopathically and hydropathically, but did not regain her strength. Then examined with speculum, and told there was ulceration of the uterus; and was frequently cauterized. Leucorrhœa and great pain followed this; fever, and peculiar nervous depression; sleeplessness. *Present State.*—Nervous, and in danger of mania. Within the orifice a little redness seen. No ulceration nor organic disease of any kind detected.
	60	—— 1851	Single.	About 30	*Previous History.*—"For some time past has suffered from great debility, languor, and dysmenorrhœa" Tonics given without benefit. "Came under the care of another medical man, who considered that she had ulceration of the os uteri, and treated her with caustic." "This I have considered uncalled for," said her ordinary medical attendant. *Present State.*—Dysmenorrhœa, leucorrhœa, diminished; is fickle and changeable; at times suffers great debility; appetite good; functions and general appearance healthy; os uteri remarkably small, soft, and smooth; orifice closed, as usual, in those who have not had children.
20	61	—— 1851	Married.	47	*Previous History.*—Three children, the youngest eighteen years of age. After each labour the bones at the symphysis pubis are reported to have become "disunited, and she was not able to walk." Still occasionally feels stiffness there. Catamenia regular. A year ago great enlargement of the abdomen took place, with sense of dragging and bearing down pain. Uterus has never appeared externally. In March last a ring pessary passed, which could not be worn. Then examined with speculum, and ulceration said to exist; repeatedly cauterized without any benefit. *Present State.*—Os uteri open; an enlargement felt between uterus and rectum.

No.	Date.	Civil Condition.	Age.	Previous Symptoms, Treatment, and State of Uterine Organs.
62	—— 1851	Married; barren.	23	*Previous History.*—Married two and a half years; in good general health, but strumous; catamenia regular; pain in the back; and leucorrhœa, especially after excitement. Her husband's sister, who has long been treated with the speculum and caustic, has endeavoured to persuade her that she has "an ulcer of the womb." *Present State.*—No displacement or organic disease of the uterus, which is very small; the orifice smooth, and the lips healthy.
63	—— 1851	Single.	30	*Previous History.*—Catamenia painful and scanty since the age of sixteen. Several years under the care of a medical practitioner, and treated for liver disease. Four years under homœopathic treatment in the country. Two years consulted a London physician, who examined her with the speculum, and said there was ulceration of the uterus. "Leeches applied every week, and caustic a great many times;" hysterical. *Present State.*—"Nervous system shaken;" leucorrhœa between the monthly periods; severe headaches; palpitation of the heart; soreness of the chest; ankles swell at night; "dreadful feeling of bearing down about the womb;" feeling of swelling about the back; heat and pain; thinks she has derived benefit from the treatment; still very ill; vagina, os, and cervix uteri in the most healthy condition; numerous boils around the external parts.
64	—— 1851	Married; barren.	Under 30	*Previous History.*—Hysterical fourteen years, and ill during the whole of that time from supposed inflammation of the bladder. Scalding in passing urine, and great aching before and after; throbbing in the epigastrium; catamenia regular, but very profuse. During nine years has been under the care of a London physician for "inflammation and ulceration of the womb." Leeches applied many times. "I cannot tell the number of times the speculum has been used, and the caustic." *Present State.*—No displacement or organic disease of the uterus detected. Her husband suffers from stricture, and has recently undergone an operation.
65	—— 1851	Married; barren.	26	*Previous History.*—Married nine months; hysterical; spasms in the hypogastric region; pain about the uterus; leeches were applied externally without relief; decided antiphlogistic treatment. Feb. Uterus examined by touch, and said to be enlarged; soon after, the speculum was employed; inflammation said to be present; and leeches applied to the os, which bled profusely, "attended with much relief." Scarifications also employed; "neck of uterus said to be tumid, red, inflamed, and tender." Calomel, opium, iodide of potassium, used for several months, and iron. *Present State.*—Excitement and exertion still bring on violent pain about the uterus. Os and cervix uteri perfectly healthy; but there is hardness and enlargement of the body of the uterus. 8th May, 1852. This enlargement now chiefly on the right side. Hysterical symptoms aggravated.

66	—— 1851	Married.	37	*Previous History.*—Youngest child six years of age. Sense of burning pain and heat about the uterus. Leucorrhœa during the last two years; and swelling of the extremities. Catamenia regular. Loss of strength and flesh during the last eleven months. Has been under the care of a provincial practitioner, who has often employed the speculum, caustic, and leeches; and who has assured her there is ulceration of the womb. Kept almost entirely in the horizontal position. General health greatly impaired. Has also been treated hydropathically. *Present State.*—Vagina sound; no displacement of uterus; thickening and redness of the posterior lip of the os; no ulceration; os open, very tender; a copious cream-coloured discharge seen escaping from the orifice.
67	—— 1851	Married twice.	35	*Previous History.*—Four children; great mental distress after the death of her first husband; second marriage fifteen months since; afterwards neuralgia and debility. Feb. 1851. Examined with speculum by a physician in London, and cauterized; "profuse bleeding followed this, and became much worse;" "constant discharge;" with hysterical symptoms; pains about the shoulders; and palpitation of the heart. In May the ulceration was said to be cured; alum injections and sea-bathing. *Present State.*—Complains of headache, of pain and irritation about the uterus and thighs, and right iliac region, with exhaustion; profuse leucorrhœa; anterior lip of os uteri large, soft, smooth; no ulceration or trace of cicatrix; posterior lip irregular, but not hard; a profuse, viscid, yellowish discharge proceeding from interior of uterus.
68	—— 1851	Married seventeen years.	38	*Previous History.*—Ten children and two miscarriages. Since the last miscarriage, in delicate health; and has suffered from dragging pain in the back and loins, leucorrhœa, and occasional uterine hemorrhages. Three years last February, three months after her confinement, examined, in a provincial town, with the speculum, when it was stated "that an ulcer of the mouth of the womb" existed, and on the verge of cancer. In the recumbent position till November; the speculum and caustic employed twice a week from April till November; health greatly injured. *Present State.*—Glands of cervix uteri enlarged; no ulceration or other disease detected.
69	—— 1851	Married.	24	*Previous History.*—Three children, the youngest seven months old. Great leucorrhœal discharge has followed each delivery, not greater after the last than the previous confinements; has suckled her child to the present time; examined by a practitioner with the speculum five weeks since; caustic repeatedly applied. *Present State.*—General health pretty good; has no pain about the back or groins, or sense of bearing down; the leucorrhœa still continues, but less; by the sense of touch, no hardness, or irregularity, or swelling of the os and cervix uteri detected; no blood escapes through the os though pressed with the finger; os uteri seen unusually red, but not ulcerated or abraded.

No.	Date.	Civil Condition.	Age.	Previous Symptoms, Treatment, and State of Uterine Organs.
70	—— 1851	Married.	28	*Previous History.*—Six children; profuse leucorrhœa since the birth of the first, nine years ago; leucorrhœa has continued ever since, not only after her confinements, but during every pregnancy; her last child born two months ago; has since been led to suspect the existence of ulceration of the uterus; consulted to determine the fact, and requested to examine with and without the speculum. *Present State.*—Voice hoarse; cough, but no thoracic disease; vagina extremely relaxed, like a bag, without any contractility; uterus not displaced; os smooth, not swollen; cervix and body natural; os seen small, smooth, rather more pale than natural.
71	—— 1851	Married.	32	*Previous History.*—Five children; a miscarriage six months ago; sense of bearing down about the uterus during the last two years, recently much aggravated: various remedies employed; strength impaired; at one period leucorrhœa; three years since examined with speculum, and cauterized; thinks she was better after, but symptoms have again returned. *Present State.*—Pain in back continues; no disease or displacement of uterus detected.
72	—— 1851	Married; barren.	Middle	*Previous History.*—Ten years married to her first husband, and never pregnant; four years to her second husband, and sterile; bougies passed by a practitioner into the os uteri; inflammation followed, and an abscess about the external parts; examined, by another practitioner, with the speculum; engorgement, and ulceration of the os and cervix uteri declared to exist, and the speculum, caustic, and leeches applied at short intervals during a whole year. *Present State.*—Health grievously injured; no disease of os or cervix uteri; abscess and fistulous opening in labium, relieved by operation.
73	—— 1851	Married.	30	*Previous History.*—Three children, in India. Has ceased suckling her youngest child six weeks, and had abundance of milk. In delicate health since the birth of this child, and unable to walk. Examined with speculum at Calcutta, and said, by the practitioner, to have ulceration of the cervix uteri. Caustic and leeches frequently applied, without relief. Compelled to return to England. *Present State.*—Orifice of vagina exquisitely tender; the orifice red and slightly swollen; great pain produced by the introduction of the smallest speculum. Os uteri red, not much swollen, not ulcerated; a copious cream-coloured discharge.
74	—— 1851	Single.	58	*Previous History.*—Catamenia ceased eight years ago. Afterwards had continual pain about the uterus. Examined with the speculum, and informed that she had cancer of the uterus. Caustic frequently applied, which it was said would check, though it would not cure, the disease. Since May last, great pain and aching of the thighs and legs, and pain across the lower part of the stomach and

				back. *Present State.*—Unable to get rest without medicine; bilious but no regular attacks of sickness and vomiting; no discharge from the vagina; no pain nor difficulty in passing the urine; no disease whatever of the uterus; a great mass of painful hemorrhoidal tumours; nitric acid applied to these. 11th Feb., 1852. Is much better in all respects.
75	—— 1851	Married.	30	*Previous History.*—One child, three years old. Procedentia uteri took place, for the relief of which the metallic instrument called "the impaling uterine machine," was introduced into the vagina. Violent pain and inflammation speedily followed. Pain and purulent discharge afterwards took place. Afterwards examined with speculum, and frequently cauterized, and had leeches applied. *Present State.*—Catamenia regular; a deposit of adipose matter in the walls of the abdomen; uterus lower down than natural; perfectly healthy; hysterical tympanites; great indigestion.
76	—— 1851	Married.	36	*Previous History.*—Seven children, youngest ten years old. During nine months, pain of the abdomen, extending down the right side under the liver. Constant desire to pass the urine; sickness at stomach. In April examined with the speculum, informed that inflammation and ulceration of the os and cervix uteri existed. Caustic and leeches frequently applied. *Present State.*—A tumour of no great size, situated in the pelvis behind the uterus, adhering to it and the rectum; os uteri irregular, but not hard; no ulceration or cicatrization.
77	—— 1851	Married; barren.	33	*Previous History.*—Married at the age of 21; an abortion three years after; syphilis from her husband; seven years ago was delivered of a dead child, and has never been well since; dysmenorrhœa, leucorrhœa. Three years ago was examined with speculum, and told "she had ulceration of the womb." Speculum and caustic employed every fifth day for three months, then sea-bathing; symptoms not relieved; caustic frequently applied several months longer; its application usually followed by hemorrhage. In 1850, disease said to be cured, but symptoms remained; a third course of speculum and caustic treatment; symptoms aggravated. *Present State.*—Health deeply injured; no uterine disease. 1854, general health greatly improved; no symptoms of uterine disease.
78	—— 1852	Married.	35	*Previous History.*—Married fourteen years; suffered from uterine inflammation in the puerperal state nine years ago; since attacks of menorrhagia; a succession of abscesses about the parts; leucorrhœa; hysteria. Examined with speculum two years ago, and told that she had "ulceration of the os." Speculum and caustic used nineteen times. The discharges afterwards for a time decreased, but returned in an aggravated degree. *Present State.*—All the functions healthy; uterus slightly prolapsed; vagina remarkably tender; anterior lip of os uteri thick, spongy, and red, not ulcerated nor cicatrized; Nabothean glands enlarged; no enlargement or induration of body or cervix.

No.	Date.	Civil Condition.	Age.	Previous Symptoms, Treatment, and State of Uterine Organs.
79	—— 1852	Married; barren.	36	*Previous History.*—Has suffered many years from pain and various morbid sensations about the uterus; irregular and painful menstruation and profuse leucorrhœa; the ordinary sensibility of the uterine system totally wanting. To remove the sterility, and relieve these symptoms, dilatation of the os and cervix uteri, with bougies, without relief. A long course of treatment with the speculum and caustic since tried, without any good effect. *Present State.*—Sterility continues, and all the symptoms; no organic disease of uterus detected.
80	—— 1852	Married; barren.	24	*Previous History.*—Married four years; soon after began to suffer from hysteria, with pain in the left side of the hypogastric region, extending down the left thigh. Examined with the speculum, and declared to have ovaritis on the left side; leeches applied, and a great variety of medicines taken without relief; catamenia profuse and painful. Examined with the speculum by another practitioner, and a suspicion expressed that the os uteri was ulcerated. *Present State.*—Catamenia profuse and painful: no enlargement or hardness of abdomen; great superficial tenderness between the umbilicus and ilium on left side; os uteri small, soft, and smooth; body not enlarged; slightly inclined forward; no tumour within pelvis; no ovarian disease detected.
81	—— 1852	Married; barren.	56	*Previous History.*—Had a discharge from the vagina the previous year, and was out of health; went to Malvern, and was treated hydropathically during three or four months; the uterus then examined with and without the speculum, and the existence of ulceration "ascertained;" caustic was used for a time, combined with packing with wet napkins, with apparent advantage; at Christmas, placed herself under the care of a physician in London, who employed the speculum and caustic, sometimes thrice weekly, and prescribed the internal use of arsenic and iron. The symptoms then were chiefly pain and red discharge, and these were uniformly aggravated by the treatment. *Present State.*—Ulcerated carcinoma of the os and cervix uteri and vagina, in an advanced stage.
82	—— 1852	Single.	28	*Previous History.*—Hysterical fits; catamenia irregular, painful, and scanty; has occasionally lost the use of her limbs, and has at times been in danger of losing her reason; uterus often examined with speculum, and caustic applied. It is stated, that she has been in the habit of applying caustic herself to the uterus through the speculum. *Present State.*—No disease of uterus detected to justify such proceedings.
83	—— 1852	Married.	24	*Previous History.*—Three premature confinements; catamenia regular; profuse leucorrhœa since the first delivery; ulceration of uterus reported to exist; speculum and caustic used, but not often;

				no benefit whatever. *Present State.*—Feeling of bearing down; pain in the right iliac region; uterus low down, near the orifice of the vagina; os open; lips soft; a fissure on the left side; a dark red appearance seen through the speculum within the orifice of the uterus, but no ulceration.
84	—— 1852	Single.	26	*Previous History.*—Without mother or sisters, and under no proper control; has suffered from hysteria in every form for several years, and irritation and excitement about the uterus. Two years ago a physician examined her with the speculum, and reported that ulceration existed; long-continued use of speculum and caustic, this done without the knowledge of her father, or any of her relatives; symptoms not relieved; went and consulted another practitioner, under whose care she remained a whole year, and was frequently speculumized and cauterized. A third practitioner, according to her statement, adopted the same treatment some time after. *Present State.*—Hysterical and slightly maniacal; refused to examine the uterus either with or without the speculum; recommended moral treatment; 1855 in a wretched state of mental distress.
85	—— 1852	Married.	52	*Previous History.*—Seven children; age of the youngest 18; always delicate; three years ago excessive menorrhagia; a small polypus detected with the finger, and removed; speculum and caustic afterwards employed every fourth day, and then at longer intervals. Seven months ago got into bad health, and had a mucous discharge; body of uterus then thought to be enlarged, and leeches repeatedly applied to the orifice; several floodings since the removal of the polypus. *Present State.*—Ankles swollen; pain in the region of the right kidney; frequent sense of bearing down; tongue furred; no appetite; impaired health and strength; os uteri smooth and closed; body of uterus not enlarged, moveable in the pelvis; no displacement.
86	—— 1852	Married; several children.	48	*Previous History.*—Has had a numerous family, and enjoyed good health till six months ago, then seized with pain in the back and hypogastrium; shooting down the nerves of the thighs, and about the groins; the appetite had failed, but there was no actual sickness; three months ago a flooding took place, which continued fourteen days, and then ceased. Examined with the speculum, and a favorable report given. *Present State.*—Profuse serous discharge; pain not acute about the back; both lips of os uteri affected with fungoid cancer.
87	—— 1852	Married.	55	*Previous History.*—Catamenia ceased seven years ago; leucorrhœa in a trifling degree during four years. Sixteen months ago examined with the speculum, in London, and informed that there was ulceration of the uterus. Being much alarmed, returned home, and was examined again with the speculum by her own medical attendant, and informed that there was no ulceration of the uterus. *Present State.*—Leucorrhœa continues; good general health; little or no pain about the uterus vagina in a healthy state; os uteri in the natural situation; posterior lip swollen, but smooth, and not hard; no bloody or fetid discharge; no organic disease of the uterus detected.

No.	Date.	Civil Condition.	Age.	Previous Symptoms, Treatment, and State of Uterine Organs.
88	—— 1852	Married; barren.	38	*Previous History.*—Married eight years; five years in Australia; since her return to England an affection of the liver, from which she had recovered. Five years ago, being sterile, and having a discharge from the vagina, consulted a physician in London, who made an examination with the speculum, and reported that there was ulceration of the uterus; did not derive any essential benefit from the treatment, which was continued several months. *Present State.*—Uterus extremely small, orifice smooth; no hardness or irregularity; no organic disease of any kind detected.
89	—— 1852	Married; five children.	37	*Previous History.*—All the labours natural; ever since the last, five years ago, has had pain in the sacrum; catamenia profuse; feeling of bearing down; hysterical; pain on the top of the head; profuse leucorrhœa; two years ago, consulted a physician in London, during three months took bichloride of mercury; great irritation of mucous membrane of stomach and bowels followed; astringent injections; leucorrhœa continued. Examined with speculum, and "abrasion or ulceration of os uteri" said to exist, and thickening of the neck; then took oxide of silver, and used an injection with nitrate of silver; leeches twice applied to os uteri; afterwards had profuse menorrhagia. *Present State.*—Hysteria in a marked form; no organic disease of uterus observed.
90	—— 1852	Married; four children.	25	*Previous History.*—The last child born on the 8th of April; is now suckling; coloured discharge from the vagina, with pain since the last confinement; had been exposed to much fatigue, and had hooping-cough during her last pregnancy. A week ago examined by her surgeon with the speculum, and the "vagina found much inflamed and ulcerated, and also inflammation with slight ulceration on the neck and mouth of the womb." "He applied caustic every other day." "Two of her sisters-in-law had suffered from the same complaint." *Present State.*—Abundance of milk for her child; lips of os uteri open; orifice patulous; body of uterus apparently imperfectly contracted; symptoms soon relieved by sea-bathing.
91	—— 1852	Married.	36	*Previous History.*—Three premature confinements in Italy, once a mass of serous cysts expelled from the uterus; a second marriage two years ago; sterile since; pain about the uterus and leucorrhœa; at Vienna, treated hydropathically; supposed by a practitioner in London to arise from rheumatic gout of the uterus; twelve months ago examined with the speculum by another physician in London, and during ten months was under speculum and caustic treatment. *Present State.*—Leucorrhœa and pain about the uterus, and across the back continues; lips of os uteri smooth and regular; cervix not swollen or hard; body not enlarged; a little hardness on right side of uterus.

92	—— 1852	Married; eight children.	45	*Previous History.*—After a miscarriage, thirteen years ago, had prolapsus uteri; more recently examined in London with the speculum, and leeches applied internally; a pessary then introduced, and worn two years. *Present State.*—Catamenia irregular, sometimes absent several months; critical age; os uteri with a fissure on left side, close to the orifice of the vagina.
93	—— 1852	Married; barren.	30	*Previous History.*—After a long walk, at New York, "felt suddenly as if something had snapped about the back;" since then an unpleasant sensation of bearing down experienced, and pain in the legs. Consulted a female American graduate in medicine, who made an examination with the speculum, and wrote the following statement: "*Result of examination made Jan. 8th, 1852: External genital organs healthy; sphincter vaginæ somewhat weak in tone; vagina healthy; os uteri low down, rather inclined forward; somewhat congested, with slight creamy discharge; cervix slender; fundus retro-flected at nearly a right angle, with an inclination to the left: uterus moveable, no tenderness on pressure.—Kramei. Radic.*, 3iv, 31,605." *Present State.*—No displacement of the uterus, nor disease of any kind whatever.
94	—— 1852	Single.	21	*Previous History.*—Hysterical, and suffered during three years pain internally; irregularity of the catamenia, for which Tinct. Guiac. Ammon. taken, and Liq. Plumb. Diacet. diluted, used as a lotion. Oct. 18th, 1851, examined with the speculum by Dr. ———, and caustic applied the same day to the os uteri; speculum and caustic have been in almost constant use during the last ten months; leeches applied ten times; chloroform and Liq. Opii Sedat. in camphor mixture every night. *Present State.*—Violent fits of hysteria; is no better; hymen gone; vagina widely dilated; uterus low down; near the ostium vaginæ, lips smooth and soft. Examined with speculum, and never saw a more healthy os uteri; no trace of ulceration, which had been declared to exist by the above eminent accoucheur.
95	—— 1852	Married.	64	*Previous History.*—Had fever, in Sicily, while in the family way thirty years ago, and has never since been quite well; then bore two children, the youngest 25; also had some disease of the liver of long standing. Four years ago, the catamenia having long ceased, and there being no discharge or symptom of uterine disease, was recommended to consult Dr. ———, who examined with the speculum, and said there was a little polypus. Went to London every week for six months to have the speculum introduced, and to be cauterized. Profuse discharge from the vagina and pain followed this treatment. *Present State.*—General health greatly impaired, and constant pain across the hypogastrium; extremely nervous, which she never was before. No organic disease could be detected in the abdominal viscera, and those of the pelvis in a perfectly healthy condition.

No.	Date.	Civil Condition.	Age.	Previous Symptoms, Treatment, and State of Uterine Organs.
96	—— 1852	Married.	42	*Previous History.*—Two children; six years ago a tumour appeared in the right side of the hypogastrium, for the removal of which mesmerism was tried, then iodine; afterwards was examined with the speculum, and had caustic applied; then balls of iodine were introduced into the vagina, which produced irritation about the parts. *Present State.*—An ovarian tumour in the right side, with a distinct fluctuation; no ulceration of uterus.
97	—— 1852	Married.	42	*Previous History.*—Married twenty-five years; one child; resided six years between the tropics, and suffered from the climate; four years ago began to feel pain in the hypogastrium, with enlargement; catamenia regular; three years ago leucorrhœa took place. One year after was examined with the speculum; ulceration of the uterus was declared to exist, and caustic applied, "which put her to dreadful pain;" symptoms aggravated; she was in a distressing state of irritation after. Her husband interfered, and stopped the use of the speculum. Went to Aix-la-Chapelle, drank the water, and took the sulphur-baths, and derived great benefit from them, then went to Spa. *Present State.*—Irritation about the uterus continues; sense of suffocation, and other hysterical symptoms; no uterine disease.
98	—— 1852	Married.	33	*Previous History.*—Married ten years to her first husband, and had seven children; uterine hemorrhage six years since, after the birth of her last child; menorrhagia since, and pain of the back, hips, and all over, and impaired health; consulted a practitioner, who examined with the speculum, and applied leeches to the os uteri; no improvement. Another practitioner consulted, who examined with the speculum, and told her to lie upon the couch four months, and applied caustic every week; a sponge then passed up to the orifice of the uterus; leucorrhœa after this diminished, but pain increased. An instrument then passed into the bladder, which produced great irritation. Again examined by another practititioner with the speculum, and leeches applied to os uteri every month. A second time married, twelve months ago; since, again speculumized and cauterized, and bougies employed. *Present State.*—No organic disease; no improvement from all this.
99	—— 1852	Single.	22	*Previous History.*—Irregular menstruation and leucorrhœa for several years; irritation of bladder and pain in the back and groins; oxymuriate of mercury taken internally; astringent injections. Examined in London with the speculum, and ulceration of os uteri said to exist. *Present State.*—Os uteri small, smooth, not ulcerated; cervix slender, not tender; body not enlarged; no displacement; health ultimately restored.

100	—— 1852	Married.	40	*Previous History.*—Delivered of a dead child, 1840, of a second in 1842, preceded by headache and puerperal convulsions; of a third, still-born child 1843; of a fourth, at the sixth month, in 1844; of a fifth, at the seventh month, in 1845; of a sixth in August, in 1846, when there was adhesion of the placenta; a mercurial course in 1847, followed by great disorder of bowels; another still-born child 8th Feb. 1850; an early miscarriage in 1851; internally leeches applied four times, eight each time, which produced a great loss of blood; then a course of treatment with speculum and caustic; this was succeeded by violent pain in right hip joint, and swelling of both legs; constant restlessness and nervous excitement. *Present State.*—Œdematous swellings of lower extremities; no disease of uterus; restored to health by rational treatment.
101	—— 1852	Married.	30	*Previous History.*—Has suffered from indigestion and headache since her last confinement, eight years ago; catamenia profuse. Four years ago the uterus was examined with the speculum, great fulness was stated to exist, and leeches were applied to the os, "which did no positive good." A friend requested her to consult Dr. ———, who examined her with the speculum, "and talked about ulceration." Went to him twenty times, and each time the speculum and caustic were used; derived no benefit from this. Mr. ——— has examined the uterus without the speculum, and he says there is a contraction of the vagina, the result of the caustic.
102	—— 1852	Single.	35	*Previous History.*—In delicate health in early life; four years ago threatened with phthisis, afterwards had hysterical symptoms, with palpitation of the heart and fainting fits. 7th October, consulted Dr. ———, who examined her with the speculum, and reported that her womb was in a wrong position, "it was completely turned, and wished her to come to London that some internal application might be made." *Present State.*—Hymen torn; os uteri smooth and healthy, lying backward; cervix and body of uterus sound.
103	—— 1852	Married.	50	*Previous History.*—The death of her husband, two years since, caused great distress, and was followed by rheumatic gout and leucorrhœa, Tinct. Guiac. Ammon., 3j, taken twice a day during two months, without benefit. In May, 1852, consulted Dr. ———, "who thought there might be a little rheumatism, but that there was certainly an ulcer in the neck of the womb, about the size of a shilling, with hardness;" caustic was applied; the same practice was pursued for at least thirty times. "During the period of these operations there were occasional floodings, at one time lasting for three weeks, and to an alarming extent." *Present State.*—Violent nervous fits resembling hysteria; lips of os uteri soft, smooth, and regular; no hardness felt; finger not covered with blood or pus; through speculum os uteri seen red, and slightly swollen; glands enlarged; viscid discharge escaping. No ulcer or cicatrix.

No.	Date.	Civil Condition.	Age.	Previous Symptoms, Treatment, and State of Uterine Organs.
104	—— 1852	Married; barren.	50	*Previous History.*—Exposed to great fatigue in 1851. Afterwards became extremely nervous and apprehensive that she had some internal abscess. There was pain in the back, for which aconite had been taken. Afterwards was examined at Leamington with the speculum, by a practitioner, "who turned it round roughly within her, which gave great pain, from which she has never since been free." *Present State.*—Hysterical, as she has been from early life, and imagines she is suffering from a great variety of disorders. Uterus extremely small, as in most sterile women; lips of os smooth; no displacement.
105	—— 1852	Married.	32	*Previous History.*—Has had six children, the youngest not twelve months old. Has suffered from pain in the right side of the hypogastric region for several years, but much worse of late. Catamenia profuse. Four months ago, while suckling her child, was examined with the speculum, and told there was ulceration of the uterus, and was cauterized, and kept in the horizontal position. Became extremely hysterical. Leucorrhœa since the caustic was applied, and sense of bearing down. *Present State.*—Os uteri soft, smooth, slightly irregular, as in women who have had children; no displacement or disease detected; tongue furred; great derangement of the digestive organs and kidneys. Aug. 1853. Is in a nervous hysterical condition; no organic disease of the uterus; has been separated from her husband twelve months.
106	—— 1852	Married; barren.	48	*Previous History.*—Catamenia scanty; constant pain in the back during the last thirty years; not hysterical; dragging pain; unable to stand; "feeling as if the ligaments had given way;" an abrasion of the os uteri said to have been discovered with the speculum some years since; kept her bed and couch entirely five months; when she got up her back was worse than before. Examined by Dr. —, with speculum, but the treatment recommended not adopted. Pessaries at one time employed with apparent benefit. *Present State.*—Lips of os uteri smooth and soft; anterior part of cervix uteri felt hard and enlarged.
107	—— 1852	Married.	41	*Previous History.*—Weak and hysterical in early life. Ever since the birth of youngest child, nine years since, has been nervous, and suffered severely from neuralgia of the gums and face. Catamenia regular; examined with the speculum; and caustic was applied nine times. After this there was leucorrhœa, but the nervous symptoms seemed better. Came to London to consult Dr. —. "It was declared in five minutes that there was ulceration." The speculum and caustic treatment resumed, and went on during a long period. Ulceration then declared to be not larger than a grain of mustard seed. *Present State.*—Os and cervix uteri perfectly healthy; the fundus lying back on the rectum; no enlargement of the cervix or body.

108	—— 1852	Married.	22	*Previous History.*—Has had repeated miscarriages. Stated to have been examined with speculum, in the country, not many days before she miscarried in July, when there was pain and hemorrhage. Has ever since been in pain, and believes she was lacerated. *Present State.*—Uterus perfectly healthy.
109	—— 1852	Married.	52	*Previous History.*—Catamenia ceased twelve months ago. Since then has had pain in the uterus and around the lower part of the spine, extending down the thighs; headache; irregular discharges from the vagina. Examined with the speculum, and inflammation and ulceration said to exist. Caustic applied once a week for a month, and then every fourteen days for several. Last applied three months ago. Now using a caustic injection. *Present State.*—No abdominal disease; vagina healthy; os uteri a little open; no hardness nor irregularity of the lips; body of uterus so high up that its condition could not be ascertained.
110	—— 1852	Married.	47	*Previous History.*—In 1838 often cupped from sacrum, after returning from India in bad health. In 1845 examined with the speculum by Dr. —, and was often cauterized. In 1846, a small polypus said to have been detached and removed; symptoms not relieved; re-examined with the speculum; ulceration reported to exist, and a long course of cauterization and leeching. Two years ago symptoms still continued; again examined with speculum, and os and cervix uteri reported to be contracted; dilatation with bougies. *Present State.*—General health completely ruined; suffers constant pain about the uterus; posterior lip hard and irregular; the cervix harder than natural; body enlarged. 1854. The uterus has undergone no change.
111	—— 1852	Married; barren.	27	*Previous History.*—Married nine years; catamenia irregular six years; great pain occasionally in the region of the liver and uterus. At the age of fifteen had a fit, accompanied with unconsciousness; several similar attacks at long intervals. Six weeks before, examined with speculum. *Present State.*—Abdomen distended, as in cases of hysterical tympanitis; great tenderness in the region of the liver; face swollen and shining; os uteri remarkably flat, so as to feel almost without lips; a small short cervix; body unusually small, and the fundus turned backwards. Symptoms, those usually present in cases of hysteria and sterility.
112	—— 1852	Single.	22	*Previous History.*—Went to a southern colony at the age of seven; climate disagreed; catamenia have never appeared; congestion of the brain and hysterical attacks during the voyage home. Has had six fits without loss of consciousness. Since her return to England, was under the care of a clairvoyant, then a homœopathist, afterwards of a hydropathist, and still later of a mesmerist; from whose treatment reports that she derived the greatest benefit. Has been repeatedly cupped, and has had nine blisters. Subsequently speculumized and cauterized by Dr. —. *Present State.*—Hymen gone; vagina and uterus in the most healthy state.

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104	—— 1852	Married; barren.	50	*Previous History.*—Exposed to great fatigue in 1851. Afterwards became extremely nervous and apprehensive that she had some internal abscess. There was pain in the back, for which aconite had been taken. Afterwards was examined at Leamington with the speculum, by a practitioner, "who turned it round roughly within her, which gave great pain, from which she has never since been free." *Present State.*—Hysterical, as she has been from early life, and imagines she is suffering from a great variety of disorders. Uterus extremely small, as in most sterile women; lips of os smooth; no displacement.
105	—— 1852	Married.	32	*Previous History.*—Has had six children, the youngest not twelve months old. Has suffered from pain in the right side of the hypogastric region for several years, but much worse of late. Catamenia profuse. Four months ago, while suckling her child, was examined with the speculum, and told there was ulceration of the uterus, and was cauterized, and kept in the horizontal position. Became extremely hysterical. Leucorrhœa since the caustic was applied, and sense of bearing down. *Present State.*—Os uteri soft, smooth, slightly irregular, as in women who have had children; no displacement or disease detected; tongue furred; great derangement of the digestive organs and kidneys. Aug. 1853. Is in a nervous hysterical condition; no organic disease of the uterus; has been separated from her husband twelve months.
106	—— 1852	Married; barren.	48	*Previous History.*—Catamenia scanty; constant pain in the back during the last thirty years; not hysterical; dragging pain; unable to stand; "feeling as if the ligaments had given way;" an abrasion of the os uteri said to have been discovered with the speculum some years since; kept her bed and couch entirely five months; when she got up her back was worse than before. Examined by Dr. —, with speculum, but the treatment recommended not adopted. Pessaries at one time employed with apparent benefit. *Present State.*—Lips of os uteri smooth and soft; anterior part of cervix uteri felt hard and enlarged.
107	—— 1852	Married.	41	*Previous History.*—Weak and hysterical in early life. Ever since the birth of youngest child, nine years since, has been nervous, and suffered severely from neuralgia of the gums and face. Catamenia regular; examined with the speculum; and caustic was applied nine times. After this there was leucorrhœa, but the nervous symptoms seemed better. Came to London to consult Dr. —. "It was declared in five minutes that there was ulceration." The speculum and caustic treatment resumed, and went on during a long period. Ulceration then declared to be not larger than a grain of mustard seed. *Present State.*—Os and cervix uteri perfectly healthy; the fundus lying back on the rectum; no enlargement of the cervix or body.

108	—— 1852	Married.	22	*Previous History.*—Has had repeated miscarriages. Stated to have been examined with speculum, in the country, not many days before she miscarried in July, when there was pain and hemorrhage. Has ever since been in pain, and believes she was lacerated. *Present State.*—Uterus perfectly healthy.
109	—— 1852	Married.	52	*Previous History.*—Catamenia ceased twelve months ago. Since then has had pain in the uterus and around the lower part of the spine, extending down the thighs; headache; irregular discharges from the vagina. Examined with the speculum, and inflammation and ulceration said to exist. Caustic applied once a week for a month, and then every fourteen days for several. Last applied three months ago. Now using a caustic injection. *Present State.*—No abdominal disease; vagina healthy; os uteri a little open; no hardness nor irregularity of the lips; body of uterus so high up that its condition could not be ascertained.
110	—— 1852	Married.	47	*Previous History.*—In 1838 often cupped from sacrum, after returning from India in bad health. In 1845 examined with the speculum by Dr. —, and was often cauterized. In 1846, a small polypus said to have been detached and removed; symptoms not relieved; re-examined with the speculum; ulceration reported to exist, and a long course of cauterization and leeching. Two years ago symptoms still continued; again examined with speculum, and os and cervix uteri reported to be contracted; dilatation with bougies. *Present State.*—General health completely ruined; suffers constant pain about the uterus; posterior lip hard and irregular; the cervix harder than natural; body enlarged. 1854. The uterus has undergone no change.
111	—— 1852	Married; barren.	27	*Previous History.*—Married nine years; catamenia irregular six years; great pain occasionally in the region of the liver and uterus. At the age of fifteen had a fit, accompanied with unconsciousness; several similar attacks at long intervals. Six weeks before, examined with speculum. *Present State.*—Abdomen distended, as in cases of hysterical tympanitis; great tenderness in the region of the liver; face swollen and shining; os uteri remarkably flat, so as to feel almost without lips; a small short cervix; body unusually small, and the fundus turned backwards. Symptoms, those usually present in cases of hysteria and sterility.
112	—— 1852	Single.	22	*Previous History.*—Went to a southern colony at the age of seven; climate disagreed; catamenia have never appeared; congestion of the brain and hysterical attacks during the voyage home. Has had six fits without loss of consciousness. Since her return to England, was under the care of a clairvoyant, then a homœopathist, afterwards of a hydropathist, and still later of a mesmerist; from whose treatment reports that she derived the greatest benefit. Has been repeatedly cupped, and has had nine blisters. Subsequently speculumized and cauterized by Dr. —. *Present State.*—Hymen gone; vagina and uterus in the most healthy state.

No.	Date.	Civil Condition.	Age.	Previous Symptoms, Treatment, and State of Uterine Organs.
113	—— 1852	Married; barren.	27	*Previous History.*—Married ten years. Last March seized with a violent flooding. Reports that she was examined with the speculum by a practitioner, who told her that she had bad ulceration of the womb, and that this had extended to a blood-vessel. Returned to London, and placed herself under the care of a practitioner, who proposed to make an examination of the uterus without the speculum, and was not permitted. *Present State.*—Does not suffer pain; there is no discharge from uterus, nor symptom of disease; has been seized with spitting of blood; condition of uterus not allowed to be ascertained.
114	—— 1853	Married; barren.	35	*Previous History.*—Married eight years; has been out of health six months; catamenia regular, but profuse; leucorrhœa. After consulting several practitioners of reputation, and being informed that there was some serious disease of the uterus, was recommended to go to an institution, where she was examined by Dr. — with the speculum; violent pain and hemorrhage followed the introduction of the instrument, and has been extremely ill ever since. *Present State.*—Vagina, os and cervix uteri extensively disorganized, with ulcerated carcinoma.
115	—— 1853	Single.	40	*Previous History.*—"For some years she had been subject to an affection of the uterus, which had given her a great deal of trouble; by some it had been considered fibrous tumour of the uterus, but I believe the general opinion is that there is retroversion with a folding of the organ upon itself, obstructing the rectum, and producing pain and nervous symptoms." She had been treated by a hydropathist at Malvern; and she had lain twelve months with her face to the ground, by the advice of Dr. —, of London. She had tried the effects of mesmerism; and at last went to Edinburgh, where the os uteri was divided with the hysterotome, and the metallic instrument forced into the vagina—usually called the impaling uterine machine. During the last two years has undergone a long course of speculum and caustic treatment. *Present State.*—No organic disease of uterus, the fundus lies back upon the rectum.
116	—— 1853	Single.	27	*Previous History.*—Has been very delicate and hysterical for some years; catamenia regular, but scanty. Consulted a homœopathist, and was for a time under his care. By the advice of a sister-in-law, consulted Dr. —, in London, who examined her with an instrument, after giving her something which made her unconscious. She went twice a week for two months, had the speculum introduced, and was touched with something which left a burning pain. Was worse after this treatment than before it had commenced. *Present State.*—Hysteria, with uterine irritation. No organic disease.

117	—— 1853	Married.	28	*Previous History.*—Profuse menstruation, in India, in 1849; pain in the sacrum, hypogastrium, and iliac regions; weight in the pelvis, and bearing down. Examined with speculum, and ulceration of os uteri said to exist. Nitrate of silver, and afterwards potassa fusa applied, "by which a deep eschar was formed." Symptoms not relieved. Returned to London; underwent another long course of speculum and caustic treatment. Then went to Kissengen. Three months after the uterine pain came back, and the treatment with the speculum and caustic resumed. *Present State.*—Os, cervix, and body of uterus in the most healthy state. Pregnancy subsequently took place twice, and both labours were safely completed without difficulty.
118	—— 1853	Married.	34	*Previous History.*—Had long suffered from what was considered spinal irritation and hysteria, for which setons had been inserted between the shoulders, and leeches and blisters had been applied; and iron, strichnine, and other remedies taken. An ordinary examination had been made, and the existence of a tumour of large dimensions in the pelvis ascertained. Consulted a practitioner after this, who examined with the speculum, the introduction of which was attended with great difficulty and pain. *Present State.*—A large diseased mass in the pelvis on the right side.
119	—— 1853	Married.	26	*Previous History.*—Catamenia regular, but scanty and painful. Has long suffered from hysteria and constant pain at the lower part of the abdomen, whenever an attempt has been made to walk, and in consequence has been much confined to the recumbent posture. Great want of energy. In 1850, underwent a long course of treatment with the speculum, caustic, and leeches. Uterus said to be ulcerated. Then went to Kissengen. *Present State.*—Ascertained, both without and with the speculum, that there was no organic disease in this case.
120	—— 1853	Married.	32	*Previous History.*—In good health before her marriage. Suffered severely during a voyage to India. Recovered after landing, but there was constant pain about the bladder, and inability to walk. A long series of nervous symptoms followed, which were stated by a practitioner to depend upon ulceration of the uterus. Underwent a long course of treatment with the speculum and caustic, without the slightest benefit. Returned to England. *Present State.*—The vagina and uterus in a perfectly healthy state. Dissatisfaction expressed by the patient when informed that there was no ulceration of the uterus, and that the speculum and caustic would not be resumed in the treatment.
121	—— 1853	Married. ——	40	*Previous History.*—Hemorrhage and profuse watery discharge from the vagina for several months, without much pain till recently. It had been ascertained, by an ordinary examination, that the os and cervix uteri were affected with fungoid cancer in an advanced stage. An examination with the speculum had been made without any bad consequences, and without any additional light being thrown on the nature of the disease.

No.	Date.	Civil Condition.	Age.	Previous Symptoms, Treatment, and State of Uterine Organs.
122	—— 1853	Married.	36	*Previous History.*—Had menorrhagia, with great debility, after the birth of her third child, in India, and was obliged for some months to remain constantly in the horizontal position; health improved by a short voyage. In 1850, after the birth of her fourth child, having moved about sooner than she ought to have done, suffered from time to time bearing down pains. Had some discharge, and was reduced to a state of great weakness. An examination was made, at Calcutta, with the speculum: "the mouth of the womb was found very large and open, the upper and lower lips ulcerated, having slight fissures in them, and in the lower lip was an ulcer the size of a small wafer, it was not deep; the inner lining membrane of the uterus was also granulated;" a course of speculum and caustic treatment. Health improved by the voyage to England. In London, leeches applied to the os uteri with injurious effects. Iodine balls, and another course of speculum and caustic treatment proposed and rejected. *Present State.*—Os uteri near the orifice of the vagina; orifice open, so as to admit the finger; glands enlarged; anterior lip smooth; posterior thickened, but smooth and soft; body of uterus slightly enlarged. Through the speculum, the lips of os uteri seen pale and flabby. Recovered by sea air and bathing.
123	—— 1853	Married.	28	*Previous History.*—Had fits, with insensibility, eighteen months ago, attributed by a practitioner, to some disease of uterus. Examined with speculum: ulceration said to exist, and caustic applied; a few days after, seized with violent pain in the left side of the hypogastrium. *Present State.*—Within the pelvis, on the left side, an enlargement felt, probably ovarian, not in an active state; March, 1853, this tumour had greatly increased, was in a state of active inflammation, and death ultimately took place.
124	—— 1853	Married; barren.	30	*Previous History.*—Married ten years; had passed three between the tropics. Catamenia irregular; leucorrhœa; has long been extremely nervous, and at times in a state approaching to delirium tremens. Was nine months under the care of a practitioner, who very frequently employed the speculum and caustic; extensive ulceration being stated to exist. *Present State.*—Lips of os uteri smooth, and soft; neither inflamed nor ulcerated.
125	—— 1853	Married; barren.	35	*Previous History.*—Menstruation had always been profuse; and two years before, had severe attacks of menorrhagia, which did not yield to ordinary treatment. Then consulted a practitioner, who examined with speculum, and said that she had ulceration of the uterus. The speculum and caustic were used a great many times with no good effect. Went to Scotland, where she was again examined

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	126	—— 1853	Married.	24	*Previous History.*—One child, two years and a half old. Catamenia profuse, with much pain; leucorrhœa; inability to walk; suckled eight months; treated for prolapsus uteri. Then examined with the speculum, by the advice of several young married friends in her neighbourhood, who were all being treated by Dr. —, for ulceration of the womb. *Present State.*—Slight prolapsus; os, cervix, and body of uterus healthy.
	127	—— 1853	Married.	30	*Previous History.*—Three children, all stillborn, at seven months. At one of the British Colonies, had long been under treatment with the speculum and caustic "for ulceration of the uterus," kept in bed during this time. No advantage; returned to England, and consulted Dr. —, "who called upon her every week, and employed the speculum and caustic at each visit during four months." Has suffered much from pains about the uterus since her last premature confinement. *Present State.*—No enlargement of the neck or body of the uterus, nor displacement; the anterior lip thicker than natural, and harder on the inner surface. Through the speculum, the anterior lip was seen swollen, but its surface smooth, no ulceration or abrasion, nor cicatrix; posterior lip swollen, smooth, no trace of ulceration perceptible.
	128	—— 1853	Married.	—	*Previous History.*—Four children, the last stillborn, July, 1852. Since October, profuse menstruation, with leucorrhœa. Had been examined with speculum, and informed that she had enlargement and inflammation of the uterus, which might terminate in ulceration. *Present State.*—No enlargement or displacement; the fundus lying unusually forward; the posterior lip a little thicker than natural, and longer. Inflammation and ulceration of the uterus stated to be very common in the provincial town where this patient resides, and the speculum and caustic in common use.
21	129	—— 1853	Single.	26	*Previous History.*—Born in India, and educated in Paris. Had typhus fever four years ago, since then has suffered from congestion of the brain; general spasms, and sickness at stomach; one day reports that she had locked-jaw at Brighton. Consulted a homœopathist, who examined the uterus with a sound, which produced great pain; retention of urine afterwards took place; then came to London, and saw Dr. —, who examined her with the speculum, and said there was ulceration of the womb, and that no practitioner in London knew anything about this disease except himself. During three weeks, the speculum, caustic, and leeches frequently employed; after which, "she became dreadfully ill." *Present State.*—Hysteria, without any inflammation or ulceration of the uterus.

No.	Date.	Civil Condition.	Age.	Previous Symptoms, Treatment, and State of Uterine Organs.
130	—— 1853	Married.	35	*Previous History.*—Married three years, one child; had leucorrhœa several years; catamenia regular, but profuse; twelve months ago, a coloured discharge came on, with difficulty in retaining the urine; sense of bearing down. In April, the discharge became thick and extensive, and pain experienced about the uterus; loss of strength, and inability to walk. Her medical attendant had made an ordinary examination, and ascertained that the os and cervix uteri were affected with cancerous ulceration. *Present State.*—Vagina, os, and cervix uteri in an advanced state of cancer. In compliance with the request of the relatives of the patient, the speculum was cautiously used. No additional light thrown on the disease.
131	—— 1853	Married.	53	*Previous History.*—Catamenia have long ceased; had long been in a nervous condition, and accustomed to the habitual use of morphia; pain from the sacrum down the thighs, and inability to walk or stand upright. "The local treatment seems to have been severe enough, the surgeon having applied caustic over the sacrum, and, as usual, the same to the interior." The os uteri was cauterized some months. "The patient is fat, fair, and well looking." *Present State.*—There is now a high state of morbid sensibility of the lumbar and sacral nerves, and a general hysteric condition; suffers from feelings of internal heat about the uterus, hips, and thighs; pain at the bottom of the back; uneasiness about the right groin, and inability to walk; no disease of the uterus; the organ small, and high up. The speculum and caustic had been used sixteen times.
132	—— 1853	Married; barren.	26	*Previous History.*—Hysteric in early life; in good general health until her marriage, six years ago; catamenia regular. Went to Paris, where she consulted a practitioner, who examined her with the speculum, and reported that there was engorgement and ulceration of the uterus; leeches were applied. Went to Italy, where her health improved. Returned to England, and consulted Dr. —, who informed her, after an examination with the speculum, that the womb was ulcerated. During six months, the speculum and caustic were very frequently employed. *Present State.*—Now suffering from hysteria in a violent degree; no disease of uterus.
133	—— 1853	Married.	23	*Previous History.*—First labour two years and a half ago; a month after, suffered from sense of bearing down, and was recommended to wear a bandage. Not being relieved, consulted Dr. —, who made an examination with the speculum, said "she had an ulcerated womb;" and was cauterized once a week during several months. Again became pregnant. Six weeks after the birth of her second child was again examined with the speculum, frequently cauterized, and leeched during

				several months. Then had a miscarriage. Afterwards, the treatment with the speculum and caustic was resumed. *Present State.*—Uterus healthy.
134	—— 1853	Married.	30	*Previous History.*—Catamenia profuse; constant pain in the back, and sense of bearing down; after the monthly periods, a thin discharge tinged with blood. Cancerous ulceration ascertained to exist by her medical attendant. With the greatest difficulty she was prevented from undergoing treatment with the speculum and caustic, being urged by her friends to place herself under the care of Dr. —. In November, the disease had made great progress, and the vagina was involved in it. An examination was afterwards made with speculum, but no caustic applied. Death ensued not long after.
135	—— 1853	Married.	37	*Previous History.*—No child for eleven years. Catamenia profuse for a long period, with pain; two years ago the discharge became much greater. Then examined with the speculum, and informed that there was ulceration of the uterus; caustic was repeatedly applied, and the ulceration was said to "be completely cured." Catamenia less profuse, but immediately followed by leucorrhœa. *Present State.*—Os and cervix uteri feel healthy, neither hard nor irregular; the lips, seen through the speculum, were red, and apparently slightly swollen and abraded; did not bleed when pressed. Now suffers from pain in the hypogastric region.
136	—— 1853	Married; barren.	47	*Pevious History.*—Catamenia had always been painful; attacks of spasms about the abdomen; a tumour detected on the left side of the hypogastrium, by her ordinary attendant. "It having been reported that Dr. — had accomplished a miraculous cure upon some friend, was consulted." An examination with the speculum was made, and the enlargement declared to be a fibrous tumour of the uterus. *Present State.*—On the left side of the abdomen, a tumour, in which an obscure fluctuation is felt; the vagina so completely blocked up with a hard mass pressing upon the posterior wall that it was impossible to reach the os uteri; after the removal of an indurated mass of feculent matter from the rectum by mechanical means, a tumour, most probably ovarian, was felt occupying the front of the brim of the pelvis. This patient had long been under the care of a homœopathist.
137	—— 1853	Married; barren.	46	*Previous History.*—Catamenia ceased two years; since, suffered severely from headache after being exposed to great mental distress; two or three years ago first felt an enlargement of the hypogastrium; pain after passing the urine, and frequent desire to do so; sickness; palpitation of the heart. This patient stated that she had been induced to procure a speculum, and that she had frequently used it herself. *Present State.*—Procedentia of the anterior wall of the vagina and bladder; no disease of uterus.

No.	Date.	Civil Condition.	Age.	Previous Symptoms, Treatment, and State of Uterine Organs.
138	—— 1853	Married.	47	*Previous History.*—A year before, repeated and profuse hemorrhages from the uterus. An examination made with the speculum: the anterior lip of os uteri reported to be red and swollen in a high degree, but no hardness or ulceration; nitrate of silver through the speculum frequently rubbed over the anterior lip without any good effect; hemorrhage returned; Potassa fusa then applied producing sloughing of the part, great constitutional disturbance took place; after its separation, nitrate of silver again applied. *Present State.*—Sallow complexion; hemorrhage; little or no pain; distressing sickness; os and cervix uteri disorganized with cancer. Death took place soon after an examination had been made with a trivalve speculum, by a practitioner who had been consulted.
139	—— 1853	Married.	42	*Previous History.*—General bad health since the birth of her youngest child, six years ago; irregular sanguineous discharges from the uterus. Twelve months under the care of a homœopathist. Then informed by a practitioner, that she had retroversion of the uterus; and she wore for a short time a metallic ring and prong, called an intra-uterine pessary, with the worse effects. Then examined with the speculum, and informed that there was no retroversion, but that the womb was ulcerated, and caustic was applied three times every week for three months. *Present State.*—No disease or displacement of uterus whatever.
140	—— 1853	Married.	27	*Previous History.*—After the birth of her first child in India, had an attack of fever and acute pain in the hypogastric region; leeches and mercury were employed. The health being severely injured, returned to England, where it was gradually restored. Went back to India, and after the birth of another child, had leucorrhœa, and "a constant draining." Was examined with the speculum, and had caustic applied three times a week during several months. This was followed by violent nervous headaches, palpitation of the heart, sense of suffocation, and a state of distressing excitement. Returned to England. *Present State.*—There is no disease of the vagina or uterus whatever.
141	—— 1853	Married; six children.	33	*Previous History.*—Three miscarriages. At ten years of age had something in her throat which prevented her from swallowing. At thirteen was extremely hysterical. This, after some years, suddenly disappeared as it came. Six weeks after the last miscarriage an examination took place with the speculum, and was informed that there was ulceration of the womb. Caustic applied four times, the last time three weeks ago. Leucorrhœa of long standing. Catamenia profuse. *Present State.*—Anterior lip of os uteri thick, but not hard or irregular; posterior lip thin; finger not covered with blood; orifice of uterus open; no redness or ulcer visible; a profuse cream-coloured discharge.

142	—— 1853	Married; five children.	39	*Previous History.*—All the labours natural. During the last ten months pain about the uterus, left hip-joint, and groin. Consulted a practitioner, who informed her that there was inflammation of the womb. Leeches were applied externally, which bled profusely. Another practitioner consulted, who reported that there was slight fulness of the uterus, but he "could discover no disease." Dr. — was then consulted, examined with the speculum, and said there was an ulcer of the womb, and applied caustic. Great sickness of stomach has since been experienced. *Present State.*—Great constipation and disorder of the stomach and bowels. By the sense of touch no disease or displacement of uterus detected. Os soft and smooth; lips equal in length; neck not enlarged or indurated; the rectum distended with a mass of indurated fæces. The patient being dissatisfied with this examination, the speculum was employed; and the lips seen smooth and pale; but immediately within the orifice a slight redness on the left side. On wiping the part, the redness disappeared. On the removal of a mass of thick fluid tinged with blood, no abrasion, excoriation, or ulceration was perceptible. There were several Nabothean glands slightly enlarged. By the proper use of purgatives this patient was speedily restored to health.
143	—— 1853	Married; two children.	29	*Previous History.*—The youngest child four years old. After a miscarriage, accompanied with much hemorrhage, suffered from a sense of bearing down, menorrhagia, and leucorrhœa. Last autumn examined with the speculum, and informed that the womb was inflamed and ulcerated. Caustic applied thrice. Symptoms not relieved. *Present State.*—The os uteri in a healthy state, but the cervix elongated in an extraordinary manner.
144	—— 1853	Married; one child, premature.	36	*Previous History.*—Married thirteen years. In February last delivered of a premature stillborn child, the first she had ever had. Three years ago consulted a practitioner, by whom she was told the uterus was retroverted, and a metallic instrument was introduced, which produced "horrible irritation." Then said to have congestion of the uterus; leeches frequently applied, which bled profusely. The speculum was then employed, and a "red spot was said to be seen in the cavity," and leeches again applied. Something wrong was then discovered about the husband's prepuce, and he was circumcised, which nearly cost him his life. *Present State.*—Great emaciation and debility; os and cervix uteri irregular and harder than natural, as after sloughing.
145	—— 1853	Married; seven children.	42	*Previous History.*—Uneasiness about the chest after suffering great fatigue; headache and giddiness; catamenia regular; slight leucorrhœa. Examined by a practitioner with the speculum, and ulceration of the womb said to exist. "Once a week the caustic was used for three months." Since then her digestion has improved, but she has not felt well, and has been taking citrate of iron with advantage. *Present State.*—Extremely nervous; uterus, in structure and situation, perfectly healthy.

No.	Date.	Civil Condition.	Age.	Previous Symptoms, Treatment, and State of Uterine Organs.
146	—— 1853	Married; nine children.	58	*Previous History.*—Catamenia ceased four years ago. Six years ago, seized with pain in the region of the heart, which was relieved by leeching. Three years since had pains in the lower part of the abdomen and thighs, irritation about the rectum, and leucorrhœa. No hemorrhoids. Then consulted a practitioner, who said "he could not work in the dark," used the speculum, and declared the womb to be ulcerated. Caustic used once a week from May till October. After this no discharge, and ulcer then reported to be cured. *Present State.*—Now complains of pain over the whole of the lower part of the abdomen. Bowels constipated There is a portion of intestine protruding at the umbilicus, which has existed nine years, and for which has worn a belt. Uterus healthy.
147	—— 1853	Married; nine children.	45	*Previous History.*—Six months ago seized with pain about the uterus, like labour, and great discharge at the monthly periods. An ordinary examination was made of the uterus by her surgeon, and the existence of cancerous disease ascertained. Dr. — saw the patient, and thought the disease was "polypoid." He applied through the speculum Potassa fusa thrice, after which all the symptoms had been greatly aggravated, especially the pain and hemorrhage. To stop the discharge, a sponge was kept in the vagina, and occasionally removed with a tape. *Present State.*—Ulcerated carcinoma of the vagina, os, and cervix uteri.
148	—— 1853	Married; several children.	30	*Previous History.*—The after-birth retained long at the last labour, and the practitioner uncertain if it ever came away. Leucorrhœa for seven years. Examined with the speculum in Devonshire some time ago, and was six months under speculum and caustic treatment. Took quinine in large quantities, and used astringent injections. Health being improved, returned to London. Became pregnant, and in the seventh month an examination was made with the speculum, and astringent injections were employed; went to the full period, and was safely delivered. A miscarriage in April last. Before this took place, examined with the speculum by Dr. —, and assured that pregnancy did not exist, but that the womb was ulcerated; and caustic was applied twice before the pain and hemorrhage commenced. *Present State.*—Os uteri feels swollen, but not hard or irregular; open and bleeding when touched; enlarged glands; lips red; no ulceration; a profuse discharge.
149	—— 1853	Married; barren.	50	*Previous History.*—For upwards of twelve months a thin watery discharge from the vagina, occasionally tinged with blood, had been going on, accompanied with dull pain or uneasiness about the uterus, with loss of appetite, general debility, and lurid complexion. A soft vascular fungus, hanging through the os uteri, removed with the forceps. This was reproduced, and the discharge had become

				more profuse, and the constitution more impaired. In consultation, a large speculum with four blades and a handle employed, and the conclusion drawn that the Nabothean glands were enlarged. Large cancerous fungoid growths from the os and cervix uteri ultimately took place, which proved fatal.
150	—— 1853	Married; one child.	37	*Previous History.*—Great pain low down the back and across the loins, since a miscarriage three years ago. Catamenia regular. A yellowish coloured discharge in the intervals, with a disagreeable odour. Had been under the care of Dr. — since April, who had examined with the speculum, told her that there was ulceration of the womb, and had frequently applied caustic. Discharge continued. *Present State.*—The mouth of the uterus felt soft and regular; with the speculum, seen red and swollen, but not ulcerated. A great discharge proceeding from the interior of the uterus. Bichloride of mercury had been taken for a long period.
151	—— 1853	Married; barren.	38	*Previous History.*—Suffered from menorrhagia before her marriage, and it has continued more profusely since. An examination was made by her medical attendant two months ago, but no disease detected. The os uteri was smooth and soft, and not unusually open. The speculum was used, but nothing was seen, engorgement, abrasion, or ulceration. Large doses of gallic acid were given during ten weeks, but the discharge rather increased under this treatment. Cold bathing and cold injections were then employed, and turpentine given internally, but this did no real service. Œdema of ankles. *Present State.*—No enlargement of the body of the uterus detected. A little irregularity or roughness on the inside of the orifice. No hardness. Nitrate of lead subsequently tried.
152	—— 1853	Married; nine children.	49	*Previous History.*—About two years ago, a coloured discharge, not very profuse, took place spontaneously from the vagina, without pain or warning of any kind, or accident; which has gone on to the present time without interruption. Six months ago began to have severe pain in the back and groins, extending down the thighs; a small coagulum of blood once expelled; discharge at times brown and watery, intermixed with blood; difficulty at times in passing the urine; strength failing; emaciation; not able to take any exertion. Has been under the care of Mr. — in the country, "and has had caustic applied through the speculum once every week during the last six months. This she said, disagreed with her, and made work upon her constitution." The caustic invariably caused pain, and increased the discharge. *Present State.*—Extensive cancerous ulceration of the vagina, os, and cervix uteri. Uterus fixed in the pelvis. Mrs. — was recommended not to submit to any further speculumizing and cauterizing. Her surgeon regarded this as a reflection upon his professional character, justified what he had done, and threatened to take legal proceedings. He was informed that Westminster Hall was the fittest place in the world for trying the merits of speculum and caustic treatment, and that the actual cautery might be useful on the occasion.

No.	Date.	Civil Condition.	Age.	Previous Symptoms, Treatment, and State of Uterine Organs.
153	—— 1853	Married; barren.	32	*Previous History.*—Dysmenorrhœa. Examined with the speculum not long since, and informed that there was dreadful ulceration of the uterus, and that she must come to London for six or eight months, to be under treatment. *Present State.*—A tender irritable state of the uterus, but no disease detected.
154	—— 1853	Married; two children.	45	*Previous History.*—Seven years ago had a bad miscarriage. There was great hemorrhage, and applications to the womb became necessary. Several abortions since. Was examined by a practitioner in the country with the speculum, and went through a course of speculum and caustic treatment of three months; leeches also were applied. Mr. —, who was subsequently consulted, said "the uterus was doubled down, or doubled up." Afterwards "he said it was backwards, and she lay three months upon her face. He said likewise there was ulceration." The treatment did no good essentially, though it was asserted that the doubling down and ulceration were both cured. Discharge and sensation of bearing down succeeded. *Present State.*—Is weak, and unable to stand long; pain in the back, and irritation about the uterus; great tenderness of os and cervix uteri; but no displacement or organic disease; critical age approaching.
155	—— 1854	Married; several children.	55	*Previous History.*—Catamenia have ceased seven years. In October there was some white discharge, it went on till the 18th of January, and there had occasionally been some discharge of blood; no pain. 20th January. Os and cervix uteri hard and irregular, nodulated, projecting unusually into the vagina. Mr. — had previously examined, without and with the speculum, and ascertained that cancer had commenced. *Present State.*—Hemorrhage of about two ounces has occurred thrice; the disease has made considerable progress; the vagina being now filled up near to the orifice. At a consultation "it was said to be a case of cauliflower excrescence, and not of cancer, and that such cases had been cured." 12th June. The disease has made great progress. There has been an attack of crural phlebitis on the left side; an abscess formed internally, and the matter escaped from the bowels. At a consultation another examination was made with the speculum; the results unknown. The patient died in August, 1854.
156	—— 1854	Married; barren.	44	*Previous History.*—After much mental anxiety, consulted Dr. — who examined with the speculum, and stated that there was chronic inflammation and congestion of the womb. "She was ordered to remain in bed six months, but remained eight," and during that time the practitioner "came every second day, and applied caustic through the speculum. The speculum was invariably used, but not

				always solid caustic, but some nitrate of silver, either solid or in solution. Then took a great quantity of steel, in consequence of the head being so much affected." At the end of the eight months was so well that she could walk about, and went into the country. Got worse again after twelve months; four leeches applied to the neck of the womb; and leeches to the groins. *Present State.*—Leucorrhœa; but the uterus is extremely small, as in most sterile women, and perfectly healthy and moveable. A painful hemorrhoidal tumour; tongue furred; bowels relaxed; sickness; no appetite; cannot sleep at night without morphia; and is frequently during the day compelled to have recourse to ammonia and stimulants. Mental confusion.
157	—— 1854	Married; eleven children.	48	*Previous History.*—After a miscarriage, two years ago, "began to complain of a vast number of symptoms, which might be comprised under the term hypochondriasis or melancholy." There was some suspicion of uterine disease, and she consulted Dr. —, who examined with the speculum, and declared that there was ulceration. A long course of speculum and caustic treatment followed. No good resulted from this. Consulted another practitioner, who said the uterus was in a flabby state, but not ulcerated. Saw two other physicians, who said the symptoms arose from nervous debility. Went to Scotland, again examined with the speculum, and leeches applied. *Present State.*—Os uteri irregular; a hard projection on the left side; a red spot seen on the posterior part, which did not bleed when pressed; no ulceration; a profuse white discharge flowing from orifice.
158	—— 1854	Married; barren.	24	*Previous History.*—Married two years; leucorrhœa ever since; was examined by a practitioner several months since, with the speculum, and abrasion of the os uteri was stated to have been observed; Argent. Nitrat., gr. x, dissolved in an ounce of water, has been repeatedly applied to the part with a camel's-hair pencil through the speculum; this has been "invariably followed by great uneasiness, and though at first there was a diminution of the discharge, at present it is as great as ever." *Present State.*—The anterior lip of os uteri felt soft, swollen, and spongy, but it did not bleed when pressed hard. With the speculum, we saw a fluid like that which flows from the nostrils in catarrh, escaping profusely from the os uteri, the inner part of the lips of which looked red, but were neither abraded, excoriated, nor ulcerated.
159	—— 1854	Single.	48	*Previous History.*—"All her life long has suffered much from pain in the back, and weakness in the lower extremities," and other hysterical symptoms; slight leucorrhœa; an examination was made by Dr. ——, with the speculum, and he stated that there was great congestion and ulceration; the speculum and caustic treatment was continued six months; for a time got better, but the symptoms returned again, with pain in the back and discomfort. *Present State.*—Catamenia irregular; there never existed a more healthy uterus.

No.	Date.	Civil Condition.	Age.	Previous Symptoms, Treatment, and State of Uterine Organs.
160	—— 1854	Married; six children.	25	*Previous History.*—Health injured in early life, from over-exertion and confinement at a boarding-school. After her second confinement inflammation of the hands took place, which spread up the arm, and large wounds took place after the application of leeches; three years ago was examined with the speculum; engorgement and ulceration were declared to exist, and for six months once a week she was speculumized and cauterized, which produced great pain. After this treatment, became pregnant, and had a child at the sixth month. *Present State.*—Great derangement of the digestive organs; violent attacks of sickness; body of uterus somewhat enlarged; no other disease detected.
161	—— 1854	Married; seven premature stillborn children.	35	*Previous History.*—Catamenia profuse through life, and coagula of blood often passed with pain; has suffered from rheumatism and almost constant pain about the sacrum, excited, apparently, by cold baths after the second premature confinement; has been under the care of Dr. —— for six years; two years ago an examination was made with the speculum, and growths were said to have been detected about the orifice of the uterus, which were cauterized, but not often; quinine, mercury, and iron have been taken, to stop the discharge, but without effect. *Present State.*—Os uteri open, so as to allow the finger to be introduced, and a hardness and roughness felt on the anterior part of the cervix like the root of a polypus; the posterior lip much tumefied, but not hard; body of uterus slightly enlarged. 15th June. Os uteri much more healthy.
162	—— 1854	Married; nine children.	35	*Previous History.*—Has never been well since her first confinement, when the placenta presented and there was a great hemorrhage. In October last was examined by a practitioner in the country, and informed that her uterus was diseased, and caustic was frequently applied; it has been continued to this time. *Present State.*—Pain about the vagina and in passing urine; pain in the back; sense of bearing down; leucorrhœa; and irritation about the external parts; no hardness or enlargement about the abdomen; no displacement of the uterus; a fissure in the posterior lip; the edges of this smooth; no hardness of the lips or cervix; anterior lip everted, and its inner surface swollen.
163	—— 1854	Married; several stillborn children.	38	*Previous History.*—Eight years ago nervous system became greatly deranged; a burning sensation about the hypogastrium and back; palpitation of the heart; catamenia regular; symptoms not then aggravated. Her medical attendant at first believed that they arose from the passage of gall-stones. At a fashionable watering-place was examined with the speculum, and informed that all her symptoms arose from congestion and inflammation of the womb, and during two months it was frequently cauterized. *Present State.*—Profuse leucorrhœa; tongue furred; indigestion; bowels confined; urine

				high-coloured and scanty; pain and burning sensation about the abdomen, especially in the evening; functions of liver and kidneys deranged; uterine organs healthy.
164	—— 1854	Married; barren.	39	*Previous History.*—Was nervous and hysterical before her marriage, five years ago; since slight lateral curvature of the upper part of the spine has taken place; catamenia regular but scanty and painful; irritation about urethra and external parts; has been examined with the speculum and gone through a regular course of treatment with the speculum and caustic. *Present State.*—The right nympha hangs out far below the labia, and is hypertrophied; orifice of urethra red and swollen, growing from the entrance into the vagina; behind there is a red excrescence which is slightly ulcerated; uterus small, but healthy, and not displaced, cause of sterility not ascertained.
165	—— 1854	Married; several children.	30	*Previous History.*—In the third month of her first pregnancy suffered severely from sickness during a disastrous voyage from England to Portugal; afterwards was injured by the overturning of her carriage, and was ill long after, and had a severe labour and bad recovery; a year after had jaundice; spent the winter in London, where she consulted a practitioner who examined with the speculum, and said she had inflammation of the uterus and ulceration; a course of speculumizing, cauterizing, and leeching, of three months' duration, without any benefit, though assured that "the inflammation and ulceration are cured." *Present State.*—Constitution greatly enfeebled; constant pain in the region between the short ribs of the left side and ilium; tongue furred; sallow complexion; appetite bad; there is no displacement or disease of any kind about the uterus; but the os and cervix are extremely tender on pressure; recovered at Brighton.
166	—— 1854	Married; several children.	40	*Previous History.*—Had a severe attack of uterine hemorrhage about a year since; the catamenia for some years had been profuse; about a month ago consulted Dr. ——, who stated that there was a small polypus, and recommended that it should be destroyed with nitrate of silver; after seven applications the polypus was reduced to half the size it had been. *Present State.*—Os uteri open; lips soft, smooth, and swollen; the finger passed readily into the cervix, where the root of the polypus, half destroyed, was felt, and another small soft polypus naturally protruding through the orifice, and hanging by a firm peduncle from the cervix; through a glass speculum we saw the extremity of this second polypus, of a white colour, protruding between the lips; it was seized with a pair of forceps and extracted, but not without considerable twisting and extracting force being used, from the firmness of its root.

No.	Date.	Civil Condition.	Age.	Previous Symptoms, Treatment, and State of Uterine Organs.
167	—— 1854	Married; barren.	43	*Previous History*—Catamenia long, scanty, and irregular; seven years ago became very hysterical, and this has been gradually becoming more distressing; sometimes afraid to be left alone; in 1851 was examined with the speculum, and informed that "two abscesses had formed in the neck of the womb;" a course of speculum and caustic treatment followed this announcement; the symptoms were not relieved; she has since tried homœopathy and the waters of Homburg; uncertain if any benefit has been derived from them; in France was examined by a physician, who told her that "the womb was turned to one side." *Present State.*—Hysteria, with danger of mania; no disease or displacement of the uterus whatever detected.
168	—— 1854	Single.	35	*Previous History.*—Has been ill since 1850, with hysteria and leucorrhœa, and distressing sense of heat about the uterus; in 1851 was four months under the care of Dr. ——, by whom the speculum and caustic were used every four days, almost without intermission, and occasionally leeches and warm hip-baths; she was then represented as quite well; but soon after, all the symptoms returned, and have distressed her ever since. *Present State.*—Catamenia every three weeks; after that suffers from the sense of internal heat; is extremely hysterical; swelling, weight, and tension, of lower part of abdomen; no disease or displacement of the uterus; is represented as being haunted day and night with the idea of imaginary ulceration of the womb; is a miserable nervous creature, unfit for anything in this world or the next; cannot walk; has just returned from Paris, where she had gone to see if anything could be done for her womb.
169	—— 1854	Single.	30	*Previous History.*—Has long been suffering from irregular hysteria; consulted, some months since, Dr. ——, who examined her with the speculum; consulted another practitioner, who considered that "she had cancer forming on the womb;" requested to examine the patient and state my opinion. *Present State.*—Uterus healthy; great hypertrophy and elongation of one of the nymphæ; on its removal, leucorrhœa, pain of the hypogastrium, and nervous symptoms disappeared.
170	—— 1854	Married; six children.	51	*Previous History.*—Catamenia ceased two years ago; a gouty affection of one of the knee-joints six years since; has suffered, for a considerable time, from excessive pain in the back, chiefly when in bed; sleeplessness; no leucorrhœa; uneasiness about the interior of the pelvis; has taken steel and taraxacum, and drank Kissengen water; consulted Dr. ——, in November, who examined with the speculum, and said that the womb was "excoriated," and applied caustic seven times; no benefit derived

				from the treatment; some discharge followed; the last application of caustic made ten days ago. *Present State.*—Lips of os uteri smooth, regular, and free from hardness; slightly swollen, red; several small depressions seen, but the mucous membrane entire.
171	—— 1854	Married; barren.	58	*Previous History.*—From early life dysmenorrhœa, and in later years menorrhagia; in 1848 a severe attack of irritative fever, "with inflammatory congestion of the uterus;" in 1849 uterus enlarged; attacks of congestion and hemorrhage, and in the intervals a constant exudation of a thick albuminous pellucid, pale-yellow, adhesive matter "presenting no organic characteristics under the microscope;" the cervix uteri larger and harder than natural, and about a month following the first attack there was similar ulceration surrounding the os, which yielded to the application of lunar caustic and leeches. In 1852 a material aggravation of all the symptoms. *Present State.*—There is a large, hard, fibrous tumour imbedded in the walls of the uterus; os uteri situated so far back that it is difficult to see it through the speculum; but it can be felt a little open, thin, smooth, and soft.
172	—— 1854	Single.	19	*Previous History.*—Had been suffering for some time from hysteria and almost total inability to walk; recently went to Scotland, where she was rendered insensible by chloroform, and an unsuccessful attempt made to introduce a speculum or some metallic instrument into the vagina; suffered violently after this attempt. *Present State.*—Hymen lacerated; vagina contracted; os and cervix uteri in the most healthy condition, and not displaced; suffering severely from hysteria.
173	—— 1854	Married; several children.	Under 30	*Previous History.*—Youngest child eighteen months old; five months before had consulted Dr. ——, who examined with the speculum, and said the uterus was inflamed and ulcerated; caustic repeatedly applied; went to the Continent, and on returning to London the speculum was again employed, and four leeches were applied to the os uteri; the catamenia had not appeared for some months, and pregnancy not suspected. *Present State.*—Profuse uterine hemorrhage and great faintness after the leeching. Something else than engorgement of the uterus being suspected by me, the vessel containing the blood discharged from the uterus was examined, and a fœtus and placenta found.
174	—— 1854	Single.	38	*Previous History.*—Catamenia excessive for years, with pain in the back and discharge between the periods; swelling of feet; cough and expectoration; hoarseness; abdomen swollen and hard on the right side; five years ago consulted a practitioner who informed her that there was a tumour in the uterus which "he could cure;" a long course of internal medicine, and she sat for ten minutes in a cold hip-bath for a long period; twelve months consulted Dr. ——, who made an examination with the speculum, and introduced an instrument "like a pipe," but it gave such dreadful pain that it was immediately removed. *Present State.*—A large hard mass internally in the front of the pelvis; os uteri situated far back; the upper part of the tumour felt in the hypogastrium.

No.	Date.	Civil Condition.	Age.	Previous Symptoms, Treatment, and State of Uterine Organs.
175	—— 1854	Married; sterile.	36	*Previous History.*—After her marriage, two years ago, "had extreme weakness of the womb and bearing down;" leucorrhœa; and at the monthly periods occasionally passed membranous substances with coagula, some of which were supposed to be diseased ova expelled in abortion; has suffered from piles, and had an operation performed; eighteen months since was examined with the speculum, declared to have ulceration; caustic was applied, but not many times; the leucorrhœa greater since. *Present State.*—No disease or displacement of uterus detected without and with speculum.
176	—— 1854	Single.	48	*Previous History.*—Was injured by a fall from a horse, at the age of 21; catamenia afterwards ceased two years, and a long course of bad health succeeded; has taken, at different times, an immense quantity of mercury; catamenia have ceased five years, and since there has been no discharge of any kind from the vagina; has suffered much from pain in the back, and frequent desire to pass the urine. Consulted a practitioner in the country, two years since, who examined with the speculum, and caustic was applied three times every week during the winter, and she lay on the couch a great part of that time. *Present State.*—Great derangement of the functions of the liver and digestive organs; slight jaundice; uterus small, lips smooth and regular; no hardness.
177	—— 1854	Single.	24	*Previous History.*—Has been treated, by Dr. ——, for ulceration of the neck of the womb (six months). The ulcer is represented to be healed, but the pain on one side of the navel still continues. The speculum and caustic were used at first once a week, and afterwards every fourteen days. They were used once a week during four months, and afterwards every fourteen days; had previously consulted a practitioner of some name, "who could not make out what was the nature of the case." *Present State.*—The uterine organs perfectly healthy; the imagination disordered.
178	—— 1854	Married; several children.	51	*Previous History.*—The catamenia had ceased for a considerable period; then hemorrhages of no great extent occurred, three or four times, with uneasy feelings about the uterus; three months under treatment with the speculum and caustic, on account of reputed ulceration of the posterior lip of os uteri; symptoms not removed. *Present State.*—Posterior lip elongated, remarkably smooth, soft; not ulcerated; os open; within the orifice a small polypus felt hanging by a firm peduncle from the inner surface of cervix. Polypus removed; parts slowly returned nearly to the natural condition without caustic.

179	—— 1854	Married; several children.	30	*Previous History.*—Great flooding after the birth of first child. Four years ago, soon after the birth of her last child, examined with speculum, and treated, by Dr. ——, for "ulceration of the womb;" was very frequently speculumized and cauterized during three months, then said to be cured; symptoms returned, and underwent a second course of cauterizing nine months after; the last time, the application of the caustic produced great pain, and was succeeded by large boils; did not feel better after; consulted another practitioner, who examined with the speculum, and said there was great ulceration of the cervix, and that the treatment would be long and severe and the issue doubtful; went to Scotland and saw a practitioner who examined with the speculum and said there was no induration of the cervix, but that the feeling of induration was produced by the womb having been "folded up," and a metal instrument was introduced; remained in the horizontal position, and was under treatment seven months. *Present State.*—Internal pain not relieved; catamenia regular; vagina, os uteri, rough and irregular, as it often is after long and severe cauterizing; no displacement nor induration.
180	—— 1854	Married; barren.	40	*Previous History.*—Consulted Dr. ——, for the purpose of knowing whether she could obtain a divorce from her husband. Examined with the speculum, and informed that it was exceedingly fortunate she had come under his observation, because she had "a great ulcer of the womb." The catamenia were regular, and there was little or no discharge at the time; underwent two long courses of speculum and caustic treatment. *Present State.*—Os and cervix uteri greatly disorganized; now suffering from carbuncles.
181	—— 1854	Married; several children.	30	*Previous History.*—The youngest child three years and a half old. A month exactly after her confinement mounted her horse and rode every day after as usual; nervous excitement and pain in the back followed. Her medical attendant had examined with the speculum, and said "there is elongation of the cervix and an epithelial appearance of the os and cervix uteri;" another had examined and said there was cancer. *Present State.*—No tenderness, hardness, or swelling, of the anterior lip; posterior lip extremely irregular, and harder than natural, which led me to believe that some escharotic had been applied to the part; the patient had been under the care of a homœopathist.
182	—— 1854	Married; barren.	25	*Previous History.*—Catamenia too copious since her marriage, and constant pain in the back when walking; felt weak. Highly nervous, but not hysterical; suffered from great tenderness of the vagina. Her sister has been long under the care of Dr. ——, and has undergone a long course of speculum and caustic treatment, and has been highly pleased with the result. This patient, though urged to consult the same practitioner, and subject herself to the same treatment, refused to do so. *Present State.*—Hymen imperfectly destroyed; os and cervix uteri in a healthy state; no tendency to disease of any kind; a bougie speedily relieved the inconvenience.

No.	Date.	Civil Condition.	Age.	Previous Symptoms, Treatment, and State of Uterine Organs.
183	—— 1855	Married; five children.	39	*Previous History.*—Profuse menstruation during the last two years and a half, and one attack of dangerous uterine hemorrhage, apparently unconnected with pregnancy. Consulted a practitioner, who examined with the speculum, and recommended caustic to be applied every week. Several months under the care of another practitioner, who examined with the speculum but did not apply caustic. *Present State.*—Os uteri widely dilated, allowing the finger to pass into the cavity; the anterior part of cervix much thickened; feet swollen; legs weak; cold perspirations.
184	—— 1855	Single.	20	*Previous History.*—Always hysterical; was about to be married, contrary to her inclination, and was in the country during the summer in her usual health when a practitioner, looking steadfastly at her, said, "I am sure there is something wrong with your womb." Being alarmed, she permitted him to examine her with the speculum, and received the information that the mouth of the womb was ulcerated; she was five weeks under his care, during which time she was cauterized almost daily. On leaving the watering-place where this occurred she was recommended to place herself immediately under the care of Dr. ——. She has been speculumized again, but the ordinary medical attendant stepped in and stopped the cauterizing. *Present State.*—Gushes of water are now said to take place from the uterus; os healthy and closed.
185	—— 1855	Married; several children.	33	*Previous History.*—Has had protracted labours from a rigid condition of the os and cervix uteri. About six weeks ago, being four months pregnant, was examined with the speculum; ulceration of the os uteri said to have been discovered, and cauterization employed repeatedly. *Present State.*—About five months pregnant; in good general health, but in great fear of the pains of labour; os and cervix uteri remarkably indurated; but not more than is often met with in cases where there is tendency to cancer.
186	—— 1855	Married; sterile.	39	*Previous History.*—Enjoyed good health till the time of her marriage, twelve years ago. Ever since has had profuse discharge, and has never, in fact, been free; catamenia profuse; symptoms aggravated during the last five years; in spite of this, has been gradually becoming stouter; has been examined with the speculum and cauterized without the slightest benefit. *Present State.*—Os uteri low down; the lips soft and regular; my finger never felt a more healthy os uteri; body of uterus lying backward; an irregular mass of no great size between the uterus and rectum.
187	—— 1855	Married; two children.	30	*Previous History.*—Adhesion of the placenta in the first confinement, in the extraction of which great force was required; a low intermittent fever followed this. Came to London, and after being

				examined, remained five weeks under treatment; did not get well till she abandoned all medicine and medical treatment; again became pregnant, and was safely delivered; fever, weakness, inability to walk, and sense of bearing down followed; consulted another practitioner, who examined with the speculum, and said the uterus was out of its place and congested; a few days ago was again examined with the speculum, and ulceration then declared to exist. *Present State.*—Os uteri red, but no ulceration.
	188	—— 1855	Married; sterile.	41	*Previous History.*—In good health nine months ago. Went out in a boat and was seized with violent sea-sickness, which was followed soon after by uterine hemorrhage; this has continued to the present time, and more especially at the monthly periods; no pain. An examination had been made by her medical attendant, and it had been ascertained that there was a tumour about the uterus. *Present State.*—The whole vagina, almost to its orifice, filled with a tumour which feels like the head of a large cauliflower, the root of which grows from the whole circumference of os uteri; speculum employed, but no light derived from it.
	189	—— 1855	Married; sterile.	31	*Previous History.*—Married ten years; weak and languid; violent pain in the limbs and back; has undergone a lengthened course of treatment with the speculum, and is told that the womb is astonishingly improved; still the strength is not much improved; consulted another practitioner, who said that there was no ulceration and no cicatrix, but that there was curvature of the womb, with congestion and considerable prolapse. *Present State.*—Uterus low down, almost at the outlet of the vagina; os and cervix perfectly healthy; body of uterus resting upon the rectum; no curvature or disease of any kind detected.
	190	—— 1855	Married; one child.	34	*Previous History.*—Five years ago began to complain of "dreadful pain about the lower part of the bowels and back;" catamenia regular. Came to London, and consulted Mr. ——, who examined her with the speculum and applied six leeches to the os uteri; "he said it was something of an ulceration of the uterus;" caustic and scarification followed; all the symptoms aggravated. *Present State.*—Os and cervix uteri greatly swollen and very irregular, and bleeding when touched; whether or not artificially induced was uncertain.
22	191	—— 1855	Married; several children.	24	*Previous History.*—Since the birth of her second child, eighteen months ago, has been weak, lost flesh, and been subject to fainting fits, and has been very nervous. Cough and dyspnœa; catamenia regular; leucorrhœa. Consulted Dr. ——, in London, who examined her with the speculum, and said "the womb was ulcerated"—"a very bad case—as bad as any he had ever seen, and that it would require a long time for its cure;" caustic was repeatedly applied, but the pain which followed was so great that the proposed course of treatment was summarily cut short. *Present State.*—Slight irregularity and hardness about the os and cervix, probably the result of the cauterization.

No.	Date.	Civil Condition.	Age.	Previous Symptoms, Treatment, and State of Uterine Organs.
192	—— 1855	Married; sterile.	46	*Previous History.*—Had, for upwards of twelve months, been suffering from pain about the uterus, and hemorrhage; two months ago consulted Dr. ——, who employed the speculum, which gave such pain that she would never allow it to be used a second time. Nature of disease not recognised; chloroform, chloric ether, bismuth, quinine, taraxacum, &c., prescribed. *Present State.*—Extensive disorganization of the vagina and uterus from ulcerated carcinoma.
193	—— 1855	Married; several children.	26	*Previous History.*—Has spent seven years in India; had twins two years and a half ago. "In December, 1853, having just aborted, she remained weak for a considerable time after this, consequent on loss of blood then; she complained of great pain in the lower part of the spine, and in the region of the womb, which generally increased at the menstrual periods. After some time I induced her to submit to an examination, and found two large ulcers on the os uteri, one on the anterior, and the other on the posterior lip; the cervix uteri was shortened and thickened, and the os uteri was tilted backwards; her general health was very indifferent, and she had curvature of the spine; the treatment has consisted in the local application of Nit. Argent. in substance and solution, (20 gr. to ℥j), and, latterly, the Potassa cum Calce, as I found the other application not to have the desired effect; "the os uteri is in a more natural situation, but she still complains of pain in the lower part of the spine." *Present State.*—Induration of os uteri, posterior lip completely destroyed; functions of liver and digestive organs greatly deranged.
194	—— 1855	Single.	34	*Previous History.*—"Please to bring your speculum vaginæ with you," said Mr. ——, on requesting a consultation; the patient had been seen repeatedly by Dr. ——, and the speculum used; informed that she had "been often suffering from irritation of the uterus, loss of power in the bladder, pain in the region of the left kidney." Three years ago the urine had been drawn off with the catheter; catamenia regular; profuse leucorrhœa; nine months ago again examined with the speculum, and no disease discovered; cauterized, but not much. *Present State.*—Acne on the face; marked hysteria; uterus in the virgin state, and sound; hymen torn up.
195	—— 1855	Married; barren.	41	*Previous History.*—Married twelve years; catamenia regular without much pain; eight years ago there was great discharge; then examined with the speculum, and cauterized; inflammation of the

				womb was said to exist; consulted a practitioner who told her, after examination with the speculum, that there was extensive ulceration; caustic was applied twice or thrice every week for a long time; got a little better after this treatment had been continued for a whole year; catamenia have recently ceased, and there has been great leucorrhœa; palpitation of the heart, and faintness and weakness. *Present State.*—Is extremely nervous; lips of os uteri gone; orifice hard and irregular, as after sloughing; cervix hard, body not enlarged.
196	—— 1855	Married; one child.	40	*Previous History.*—Hysterical in early life. After the birth of her child, eight years ago, began to suffer from pains in the loins and inability to walk; consulted Dr. ——, in London, and was many months under speculum and caustic treatment; leeches were occasionally applied; then consulted Dr. ——, and went through another course of similar treatment; then consulted a third physician, who approved of all that had been done, and recourse had once more to the speculum and caustic; no benefit whatever derived from this treatment, though thrice declared to be completely cured. *Present State.*—Is now confined almost constantly to bed; walking produces pain about the loins; an immense mass of fat in the walls of the abdomen; catamenia regular; leucorrhœa; uterus extremely small and remarkably healthy.
197	—— 1855	Married; one child.	28	*Previous History.*—One stillborn child and five miscarriages, the last three years ago; ever since has had constant soreness in the lower part of the back, stretching down the limbs, increased by walking and exertion; then occasional bad nervous attacks, with loss of consciousness, during several years; feelings of deep depression before these attacks; has never fallen down in these, and they were, probably hysterical; has undergone a long course of speculum and caustic treatment without the slightest benefit; has had leucorrhœa and uneasiness within the pelvis ever since; some years under the care of a homœopathist. *Present State.*—No displacement of uterus; os irregular; an old fissure on left side; no hardness, no ulceration.
198	—— 1855	Married; several children.	32	*Previous History.*—Seven miscarriages; examined with the speculum, three years ago, and treated for ulceration of the uterus, in Ireland; the caustic applied every week, which gave great pain; since has had continual brown discharge, frequent irritation about the bladder; severe pain in the lower part of the back. *Present State.*—General health good; lips and neck of uterus healthy; orifice unusually open; has been recommended to try the waters of Kreuznach.

No.	Date, &c.	Civil Condition.	Age.	Previous Symptoms, Treatment, and State of Uterine Organs.
199	—— 1855	Married; several children.	52	*Previous History.*—Resided long in Portugal. Ten years ago was fourteen months under the care of Dr. ——, in London, during the whole of which time lay in the horizontal position, had the speculum introduced twice a week, and caustic or leeches applied to the os uteri; about three hundred leeches were used. "Has never had a day's health since this treatment;" five years ago went to Paris and consulted a practitioner who made an examination of the uterus, and said, "Your health is very much injured; do everything to strengthen your constitution, and I beg of you to undergo no treatment similar to what has been pursued in England;" has since suffered from derangement of the liver; this day week consulted Dr. ——, in London, who examined with the speculum, and said, "he discovered with it a local inflammation," and prescribed a solution of acetate of lead, and begged her to repeat her visit in a week, when the speculum was again introduced and caustic applied. *Present State.*—Lips of uterus pale and healthy; no disease of any kind.
200	—— 1855	Married; several children.	27	*Previous History.*—Ill three years; after a miscarriage with great flooding seized with pain in the left side of the hypogastrium; after leeching, cupping, a course of mercury, and lying up six months, the chronic inflammation on the left side gradually subsided, but the pain continued, and the general health greatly impaired; then consulted a homœopathist, who said the womb was displaced; means employed for this purpose not known; soon after this, pregnancy took place, and the labour at the full period lasted forty-eight hours; took chloroform, which did not agree with her; since delivery has been subject to attacks of spasm "in the womb, like labour pains," and unable to walk; has undergone a long course of speculum and caustic treatment for ulceration at a fashionable watering-place on the east coast of England. *Present State.*—Uterus healthy.
201	—— 1855	Married; sterile.	38	*Previous History.*—Returned to England after residing several years in India, where the health was greatly injured; went to Scotland, where she was some time under speculum and caustic treatment "for ulceration of the womb," from which no benefit was derived; then came to London, where she consulted Dr. ——, and went through another course of speculumizing, cauterizing, leeching, and scarifying; returned to India, where her health again suffered; the catamenia have been regular to the present time, but the abdomen has been gradually enlarging, and she has had many of the symptoms of pregnancy. *Present State.*—An enormous deposit of fat in the parietes of the abdomen; lips of os uteri gone; the organ small, as in sterility.

202	Burton Ward, St. George's Hospital; 1854, 1855.	Married.	43	After symptoms of gonorrhœa; speculum and caustic employed twice a week during two months; discharge not diminished; no advantage, real or imaginary; uterus perfectly natural; no cicatrix.
203	—— St. George's Hospital.	Single.	22	After symptoms of hysteria and leucorrhœa; a course of speculum and caustic treatment; hysteria aggravated; discharge unchecked; uterus in a perfectly natural state; no ulcer and no cicatrix.
204	—— St. George's Hospital.	Single.	20	After hysteria and great flatulence, twice examined with the speculum; much hemorrhage and pain were the result; uterus perfectly healthy.
205	—— St. George's Hospital.	Married.	33	After hysteria and general ill health, a course of speculum and caustic treatment; great aggravation of all the symptoms; all the uterine organs healthy.
206	—— St. George's Hospital.	Married.	49	After slight leucorrhœa and pain, a course of speculum and scarification; acute inflammation followed; uterine organs perfectly healthy.
207	—— St. George's Hospital.	Married.	28	After slight leucorrhœa, course of speculum and caustic treatment for eight months; abortion in five months after last operation; uterus in the natural condition.
208	—— St. George's Hospital.	Married.	33	After leucorrhœa and sanguineous discharge, speculum used; no result; slight swelling of os and body of uterus.
209	—— St. George's Hospital.	Married.	40	After leucorrhœa and general debility, speculum and caustic for six months; apparent benefit derived; slight tumefaction of os uteri; no ulceration.
210	—— St. George's Hospital.	Married.	31	After hysteria and pains about pelvis, speculum and caustic frequently employed for a long period; aggravation of hysterical symptoms; no amelioration whatever; slight hardness and irregularity of os uteri; not malignant.
211	—— St. George's Hospital.	Married.	39	Pains about pelvis; speculum and scarificator used; no advantage supposed to have been derived; slight induration of os and cervix uteri.
212	—— St. George's Hospital.	Married.	36	Pain in back and sanguineous discharge; speculum and caustic for six months; apparent temporary advantage; hardness and swelling of back part of cervix.

No.	Date, &c.	Civil Condition	Age.	Previous Symptoms, Treatment, and State of Uterine Organs.
	1854, 1855.			
213	—— St. George's Hospital.	Married.	33	After uneasiness, hemorrhage, and other symptoms of organic disease of uterus, speculum and caustic repeatedly used; great aggravation of all the symptoms; tumour within the uterus, probably fibrous.
214	—— St. George's Hospital.	Married.	44	Ovarian tumour; os uteri so high up as not to be reached; speculum employed; no effect.
215	—— St. George's Hospital.	Single.	29	Soft vascular growths of doubtful character protruding from os uteri; after detection of tumour, speculum and caustic every second morning for five months; disease advanced considerably during treatment, and ceased to enlarge when abandoned.
216	—— St. George's Hospital.	Married.	55	After detection of small protrusions, caustic applied through speculum with considerable apparent advantage.
217	—— St. George's Hospital.	Married.	42	Malignant tumour attached to os uteri; during last year, weekly application of caustic through the speculum to tumour; great injury produced.
218	—— St. George's Hospital.	Married.	52	Cancer of os and cervix uteri; examined with speculum soon after the commencement of the disease; much pain and hemorrhage produced.
219	—— St. George's Hospital.	Married.	40	Cancer of os and cervix uteri; examined with speculum in last stage of disease; great pain and hemorrhage.
220	—— St. George's Hospital.	Married.	52	Examined with speculum in the advanced stage of cancer of anterior wall of vagina; constant vomiting, and death followed.

NOTE.—The names of all the patients referred to in the preceding table, with the specific dates, were contained in the paper, when presented through the President to the Society.

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TO THE

ROYAL MEDICAL AND CHIRURGICAL SOCIETY,

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Those marked * are from the Authors.

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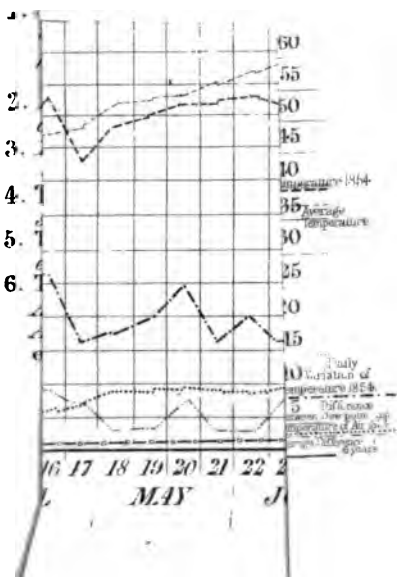
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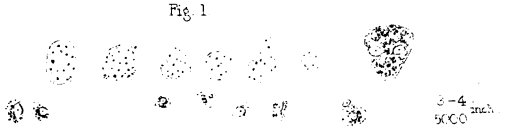
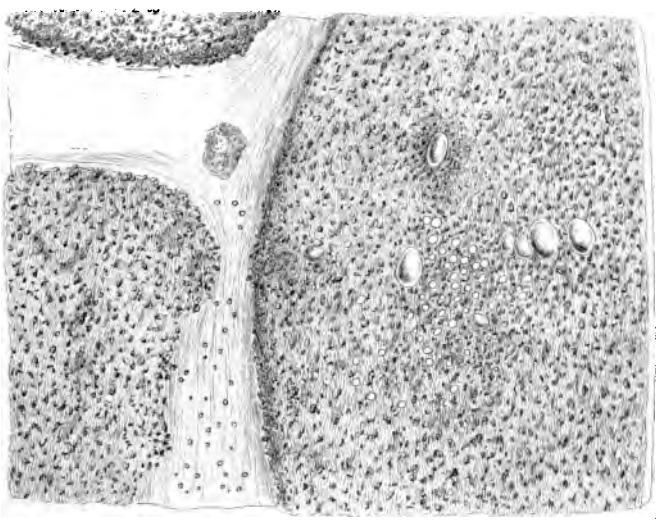
Fig. 1



Healthy pancreatic cells.

Fig. 2.

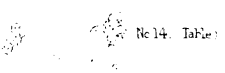


Portions of 3 lobules of pancreas in state of Degeneration
No 17 (Table)

Fig. 3.

Wasted epithelium of pancreas.

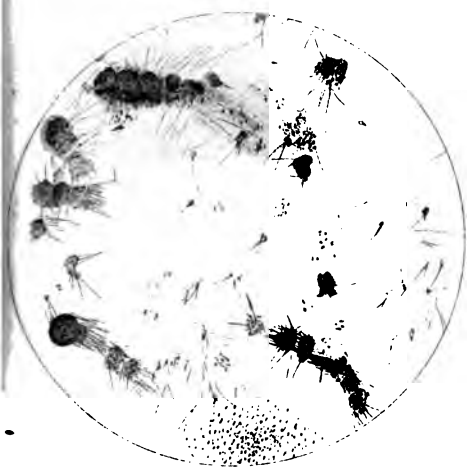
Wasted epithelium from
the above pancreas. Fig 2



Wasted epithelium of pancreas.

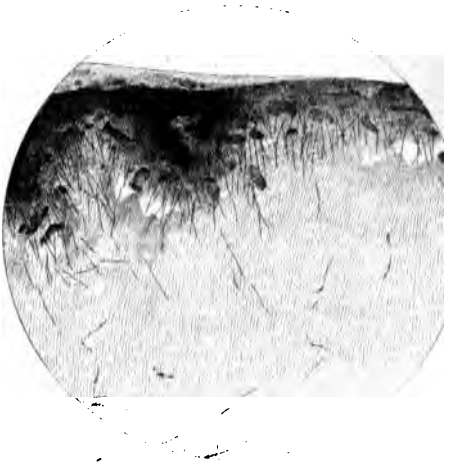
Malignant growth in the Larynx

Fig. 3



Urate of Soda in Cartilage. Deposit in an early stage.
From specimen mounted in Canada Balsam.

Fig. 4



Cartilage with Gouty Deposit. Vertical Section.
specimen mounted in Canada Balsam. Deposit crystalline

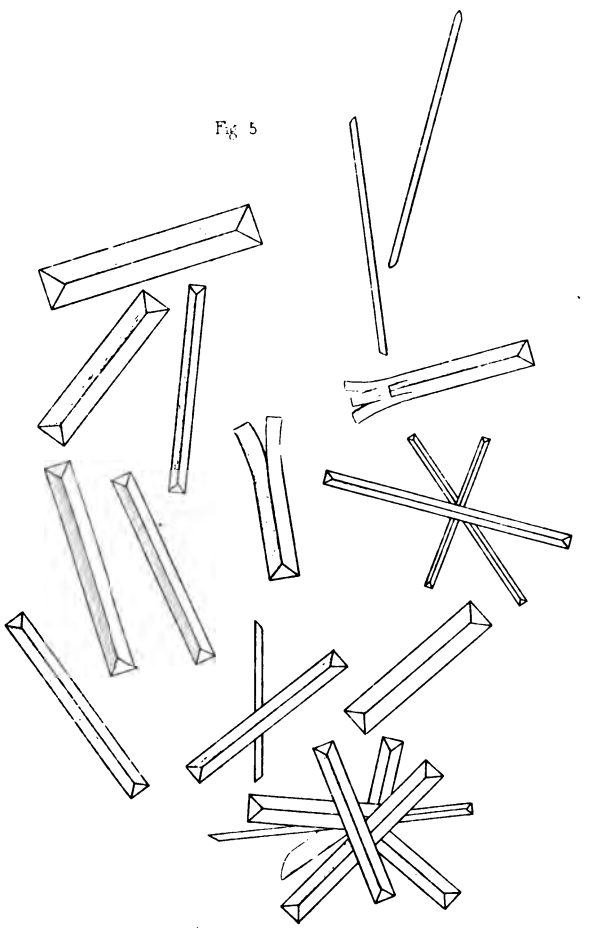
Fig 2.

Urate of Soda in Cartilage.

Fig 1

Oblique section of cartilage containing Gouty Deposit
Deposit amorphous

Fig 5



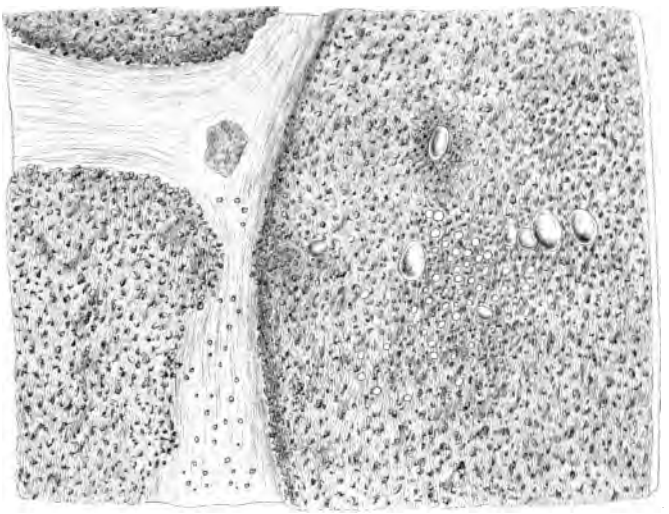
Crystals formed on the addition of Nitric Acid to the Alcoholic Extract of the blood of a man suffering from Acute Gout; Supposed to be Hippuric Acid.

Ladmat del. GH Ford.

Fig. 1.

Healthy pancreatic cells.

Fig. 2.

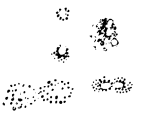


Portions of 3 lobules of pancreas in state of Degeneration
No 17 (Table)

Fig. 3.

No. 22 (Table).

Wasted epithelium of pancreas.

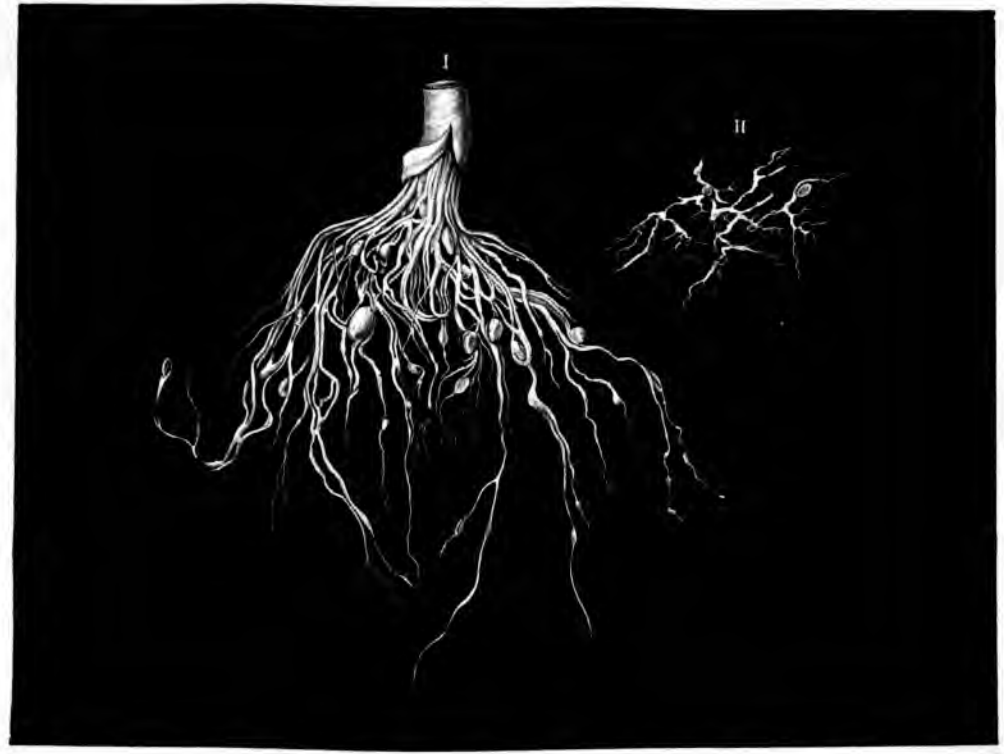


Wasted epithelium from the above pancreas. Fig 2

No 14. (Table)

Wasted epithelium of pancreas.

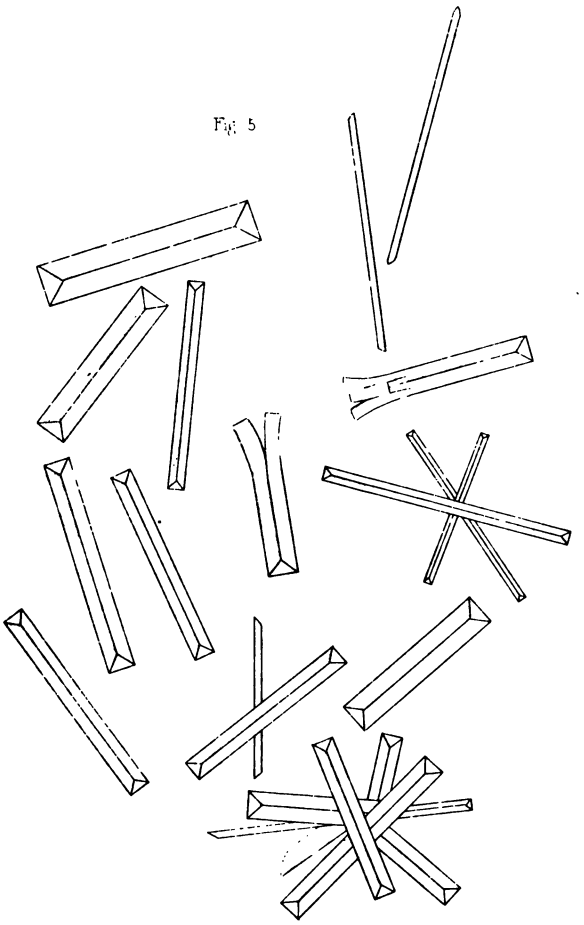
Ford sc.



I. Part of a Lymphatic Trunk with the growth of Cartilage and other structures which filled it, disentangled and spread out.

W.H.Fitch del.

Fig. 5



Crystals formed on the addition of Nitric Acid to the Alcoholic Extract of the blood of a man suffering from Acute Gout; Supposed to be Hippuric Acid

d. ad. nat. del. G.H. Ford.

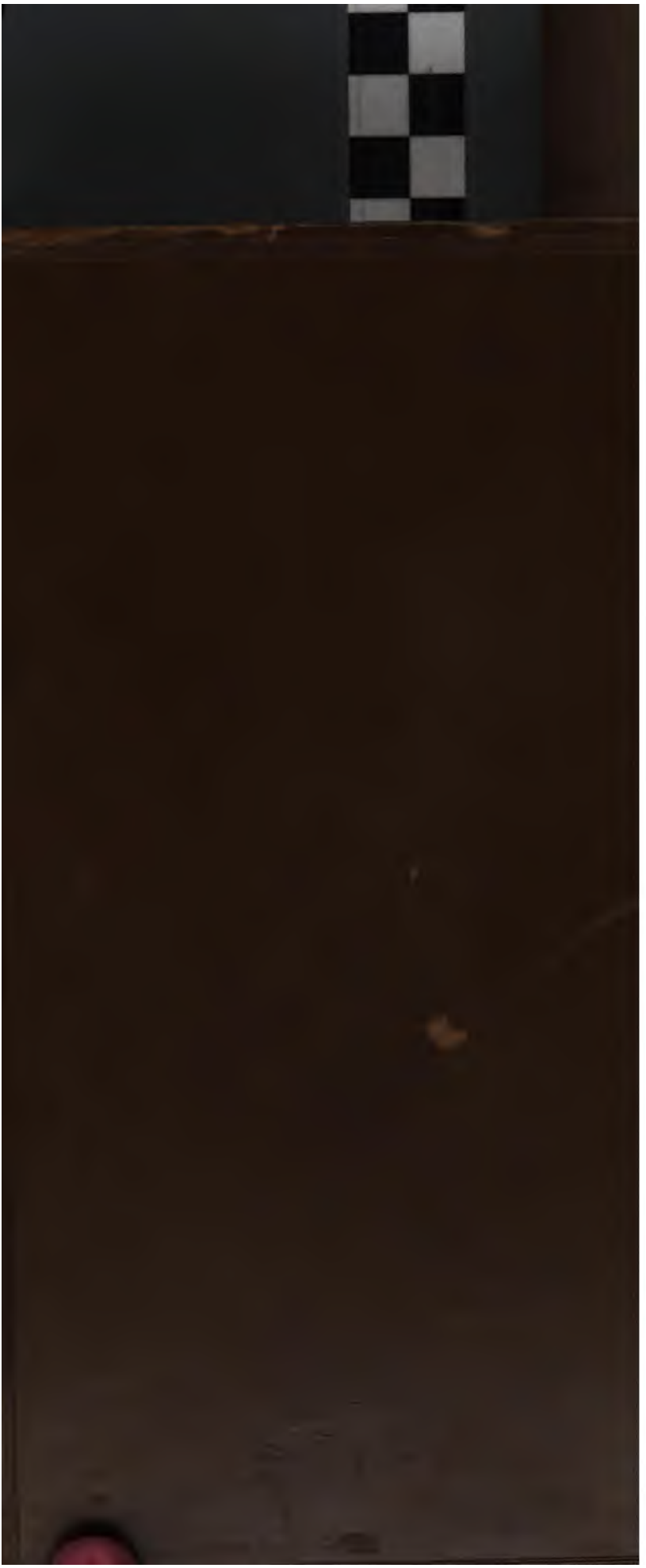
Pl. V.

Plate of the lumbar and iliac lymphatics containing [illegible]

A The Aorta cut across. B B Lymphatic trunks with [illegible]

C C C C Lymphatic vessels

Anderson.

I
II

Pl. IV.